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A National Newspaper for Every Branch of the Industry

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Automotive Daily News

CARS · SHOP EQUIPMENT · TRUCKS · AVIATION · PARTS · ACCESSORIES · TIRES

Vol. 11. No. 1539 — Entered as second-class matter Aug. 27, 1925, Post Office, N. Y., N. Y., Under Act of March 3, 1879. — NEW YORK, FRIDAY, AUGUST 21, 1931 — 5 Cents. $12 Per Year

Motor Plants Reported In Market for New Model Materials and Supplies

Real Purchasing Expected to Develop Early in Autumn; Buick to Close Some Departments in September

Detroit, Aug. 20.—Reports received here from Pittsburgh, Youngstown and other steel manufacturing centers indicate that there has been some revival of buying by automotive interests. A survey of the purchasing departments of various leading automotive manufacturers here partly, at any rate, bears this out. In several cases the executive who does the purchasing acknowledged that specifications had been sent out to cover needs for work on the new production schedules. In general, however, material purchases are still in the inquiry stage rather than in actual commitments.

Enough definite replies were obtained to make it certain that the automotive industry will be buying materials within the next few weeks in sufficient volume to make an impression on any autumn revival that may occur in steel and kindred industries. In some factories certain departments have already begun to run on units to be used in the new cars that will be announced during the end-of-the-year period. During the coming month more of the automotive plants will start on this new production, at first one or two departments and then swinging the entire manufacture into the new lines.

Within the past day or so a report has been current in this city that Buick would shut down its plant for an indefinite period. C. W. Churchill, general sales manager of Buick, made a brief announcement to clarify this report. "Certain departments," said Mr. Churchill, "will be closed during the first three weeks of September for inventory instead of during December as formerly, but the plant will be in regular operation again in the fourth week of September."

Opinion here generally favors the idea that beginning next month there will be the regular fall revival, with automotive buying of material contributing to the uplift. None of the leading executives queried by Automotive Daily News was willing to commit himself as to the volume or the length of the revival.

AUTOMOTIVE STEEL BUYING AIDS PLANTS IN MAHONING VALLEY

Youngstown, O., Aug. 20.—Signs that Youngstown district steel plant schedules will advance during September are seen by sheet and strip mill managers of the Mahoning Valley. Resumption of operations at Ford Motor Company plants is expected to bring sharply higher pro-

(Continued on Page 2)

Late News Flashes

Chicago, Aug. 20.—The Perfect Circle Company for the seven months ended July 31, 1931, reports a net profit of $586,579 after charges and taxes. This is equivalent to $3.60 a share and compares with $2.64 a share during the same period of 1930. The balance sheet shows current assets of $2,117,095 and current liabilities of $119,176.

* * *

New York, Aug. 20.—The Kelly-Springfield Tire Company reports for the six months ended June 30, 1931, a net loss of $281,436 after charges, depreciation and interest, comparing with a net loss of $587,610 in the first half of 1930.

* * *

Washington, Aug. 20.—According to announcement by the Bureau of Census here today, the rural population of the United States declined to 43.8 per cent. of the total in 1930, as compared to the 48.6 per cent. indicated in the census of 1920.

USED CAR MARKET IMPROVED; STOCKS LOW, VALUES HIGHER

NEW YORK, Aug. 20.—Reports on used car merchandising in July and for the first seven months of 1931 indicate that this market as a whole is in a much better technical position than at the same time last year. Used car stocks are generally lower, dealer's investment in this type of merchandise has been curtailed, while the average unit sales value has increased.

In the city of Louisville, Ky., it is interesting to note that at the beginning of 1930 the dealers had on hand 1,527 used cars, representing an investigation of $448,891.99, or an average of $293.98 per car. This sisuation was consistently improved during the summer and fall months of 1930, until at the opening of 1931 the stock had dwindled to 1,124 units, representing an investment of $281,006.44, or an average of $250 per vehicle.

Since the beginning of this year, however, still further improvement in the technical position of the used car market in Louisville is apparent. At the end of July this year the dealers had on hand only 956 cars, representing an investment of $244,234.34, or an average value of $255.48. This would mean only that the dealers were paying more for used cars or that a much better grade of used car was being accepted in trade were it not for the fact that the average sales value of the cars has increased to a greater extent than the value of the stocks on hand.

The average sales value of used cars in Louisville had reached bottom during January this year, when 645 cars were sold at an average value of $209.48. The previous low mark in the preceding twelve months was reached in October,

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Ten Companies Score Gains In July Sales in 26 States

Auburn Leads List in Size of Gains by Registering 1,757 Units This Year, Against 455 in 1930

NEW YORK, Aug. 20.—With sales returns in from twenty-six states and the District of Columbia for the month of July, 1931, it is indicated that ten passenger car manufacturers will beat their records for July of last year. The sales record for the month for the industry as a whole will fall behind last July's level by approximately 25 per cent.

Auburn leads the list in the size of the gain registered over last July, with 1,757 units against 455. Chevrolet shows a total of 29,949, which compares with 27,855 in July 1930 for the same twenty-six states. De Soto has registered 1,910 against 1,884. Dodge has a total of 2,850 against 2,744. Lincoln sales are 159 to date, comparing with 155 last July.

Nash goes into the gain column for the first time this year, with 2,680 units against 2,486 last July. Plymouth has registered a dramatic gain, with 7,348 against 4,440 a year ago. Pontiac also makes an excellent showing with 4,214 against 2,810. Willys-Overland makes a good gain with its Willys line, having sold 2,164 against 1,675 sold last year in July in these twenty-six states and the District.

The total cars registered by these ten companies in July 1931 is 53,031 against 44,504. However, the decrease in sales by other companies wipes out this advantage and the total sales to date stand at 99,311 against 124,756 in the same territory last July. In some cases returns from other states may send some of these makes into the "decreased" column, the margin being slight, but on the other hand, there are a number of other comapnies that are barely under their last year's records and slight gains in the states still to report would send them into the gain column.

The following tabulation shows the companies scoring gains in the twenty-six states and the District of Columbia, with the figures for this July and last:

	July, 1931	July, 1930
Auburn	1,757	455
Chevrolet	29,949	27,855
De Soto	1,910	1,884
Dodge	2,850	2,744
Lincoln	159	155
Nash	2,680	2,486
Plymouth	7,348	4,440
Pontiac	4,214	2,810
Willys	2,164	1,675
	53,031	44,504

SHARP SALES GAIN BY CHRYSLER GROUP OVER JULY, 1930

NEW YORK, Aug. 20.—Passenger cars of the Chrysler Corporation in July registered a sharp increase in sales over June, and also established a big gain over the corresponding month of last year. This is the inference to be drawn from the new car registration reports from nineteen states and the District of Columbia for last month.

Combined sales of the Chrysler units as measured by registrations in those states in July were 8,055, as against 4,846 in the preceding month, a gain of 66 per cent., and comparing with 6,444 in July of last year, up 25 per cent. Plymouth accounted for the bulk of the increase in both cases.

The low-priced unit was not the only Chrysler product to show increase, however. De Soto and Dodge registered gains over the corresponding month of last year, and Chrysler, De Soto and Dodge showed gains over June.

Plymouth registrations in the reporting states total 3,863 for July, as against 2,455 in the similar period of 1930, a gain of 57 per cent.,

(Continued on Page 2)

OFFICIAL STATION APPOINTMENTS DUE IN PA. BY SEPT. 1

Harrisburg, Pa., Aug. 20.—Officials of the Pennsylvania Department of Revenue have advised the Pennsylvania Automotive Association that applications for appointment as official inspection stations will be released before September 1 to all who were appointed during the year 1930.

After the applications have been received by the department they will be assigned to an equipment inspection supervisor, who will visit dealers, inspect establishments, and recommend to the department approval or rejection.

Those who are appointed an official inspection station will be allowed to engage in all future motor vehicle equipment inspection campaigns, and will also be authorized to do any light or brake adjusting. Dealers, appointments as official headlight adjusting station, and official brake adjusting station, are valid until December 31, 1931, after which they will be superseded by the official inspection station.

"Permanent equipment inspection station appointment is a step in the right direction," says C. S. Klugh, manager of the trade association.

(Continued on Page 2)

DIESEL-POWERED MODELS PLANNED BY INDIANA TRUCK

Marion, Ind., Aug. 20.—Negotiations are under way at the Indiana Truck Corporation here for the manufacture of Diesel - powered trucks, it was announced by H. K. York, general manager, following receipt of word from Los Angeles of completion of the test run of an Indian truck equipped with a Cummins Diesel motor.

The trial drive of the Diesel which was begun at New York last week was completed in ninety-seven hours' driving time, it was stated

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REGISTRATIONS GAIN 1,435 IN NEBRASKA

Lincoln, Neb., Aug. 20.—Registration of motor vehicles in Nebraska for the first six months in 1931 showed a total of 405,627, or an increase of 1,435 vehicles over the same period in 1930. The number of passenger cars was 334,688 this year, a decrease of 5,992 from the same period a year ago, while commercial vehicles numbered 70,939, an increase of 7,427, compared with the first six months of 1930. The total receipts for license plates this year were $3,562,266, a decrease of $24,000 from the six months a year ago.

Used Car Market Improved; Stocks Low, Values Higher

(Continued from Page 1)

1930, when 655 used cars were sold at an average value of $215.71.

Since the first of this year the trend of used car values has been consistently upward, which would indicate that buyers are seeking a better grade of used cars or that values all along the line have increased. In view of the reduced inventories it is more likely that the latter development is the case. During July this year 754 cars, representing an aggregate value of $173,443.85, were sold, which gives an average of $230.03 per car, an increase in sales of 109 units and an increase in unit value of $20.55.

Much the same condition obtains in San Francisco, Cal., but the reduction of stocks and the unit value of dealer holdings has not been so sharply defined. In that city at the beginning of this year the stocks on hand totaled 1,557 units with an average value of $435. At the end of July the stocks on hand had been reduced to 1,549 units but the unit value had increased to an average of $437. Sales in San Francisco during January this year totaled 1,184 units with an average value of $336 per unit, whereas the sale during July had crept up to 1,467 units with an average value of $351.

Sales of used cars in both Louisville and San Francisco have maintained a pace very close to the first seven months of 1930. In Louisville dealers closed the seven months period just one unit behind the same period last year with 5,721 units in 1930 as compared with 5,720 units this year. In San Francisco the used car sales during the first seven months last year totaled 10,558 units, as against 9,752 units this year, a decline of only 806 units.

Used car sales in San Antonio, Tex., were off somewhat in unit value during July, as compared with the other months this year and were the lowest since January, 1930. July used car sales this year totaled 705 units with an average value of $279 as compared with 1,093 units for July last year with an average value of $322. Stocks at the end of July this year totaled 1,110 units with an average value of $288 as against 1,368 last year with an average value of $364.

An interesting feature of the July sales in San Antonio this year, however, is that over 60 per cent. of the used car sales were priced under $300. About 30 per cent. ranged in value from $300 to $600 and 5 or 6 per cent. were priced $600 to $900 leaving only about 2 per cent. in the $900 and over class. Eighty-seven cars were junked in San Antonio during the month.

OFFICIAL STATION APPOINTMENTS DUE IN PA. BY SEPT. 1

(Continued from Page 1)

"The Department of Revenue, under the proposed plan, will closely supervise the activities of all stations appointed. The day of passing a sticker out with a purchase of five gallons of gasoline is over. The day when a small number of stations can gouge a motorist out of unnecessary work is also a thing of the past.

"It is contemplated that the next campaign will be held during the months of January, February and March, 1932, with a three-month arrest period to follow.

"Every P. A. A. member who operates a repair shop should apply for appointment as an official inspection station. If you do not receive an application by September 1, communicate with us."

TRUCK REGISTRATION FIGHT THREATENS IN N. C.-GA.

Atlanta, Ga., Aug. 20.—An automobile tag war between Georgia and North Carolina threatened this week following the arrest of the driver in Gastonia, N. C., of a truck belonging to an Atlanta concern, because the truck failed to have a North Carolina license tag.

SHARP SALES GAIN BY CHRYSLER GROUP OVER JULY, 1930

(Continued from Page 1)

and comparing with 1,075 in June, an increase of 260 per cent.

Dodge registrations totaled 1,653, as against 1,430 a year ago, an increase of 15 per cent., and comparing with 1,439 in June, up 15 per cent. also.

Chrysler sales amounted to 1,561 for the reporting states, as against 1,631 a year ago, a decline of only 4.7 per cent., and comparing with 1,437 in the preceding month, a gain of 8 per cent.

De Soto registrations in July were 978 in the states that have reported, as against 920 in the same states a year ago, gaining 6.3 per cent., and comparing with 875 in June, up 11 per cent.

Here are the registrations of the various Chrysler units in the reporting states for July, as compared with a year ago and with June of this year:

	July 1931	July 1930	June 1931
Plymouth	3,863	2,455	1,075
Dodge	1,653	1,438	1,439
Chrysler	1,561	1,631	1,437
De Soto.....	978	920	875
Totals	8,055	6,444	4,846

The reporting states are Arkansas, Delaware, Florida, Idaho, Illinois, Indiana, Maryland, Minnesota, Missouri, Montana, New Hampshire, North Carolina, North Dakota, Rhode Island, South Carolina, South Dakota, Utah, West Virginia and Wisconsin.

A. S. S. T. DELEGATES TO VISIT BOSTON PLANTS

Cleveland, Aug. 20.—Eight plants in the metropolitan Boston area will be visited by the American Society for Steel Treating Engineers attending the National Metal Congress and Exposition to be held there the week of September 21.

Watertown arsenal will be visited the morning of September 22. The following day officials of the Fore River plant of Bethlehem Shipbuilding Corporation will escort groups through the repair docks, forge plant and other interesting departments. An optional trip is to the plants of the Boston Gear Works and Pneumatic Scale Company.

On September 24, the River works of General Electric Company will be open to inspection. An alternative trip is to Naumkeag Steam Cotton Company at Salem. The United Shoe Machinery Company of the Trimont Manufacturing Company may be visited on September 25.

Announcement has been made that all technical sessions of the Congress will be held in Hotel Statler except those of the American Welding Society, which will be at the Copley Plaza.

TOLEDO SCALE NAMES W. A. FINK, TREASURER

Toledo, Aug. 20.—W. A. Fink has been appointed treasurer of the Toledo Scale Company, subsidiary selling organization of the Toledo Scale Manufacturing Company.

Mr. Fink has been associated with the Toledo Scale organization for over thirteen years as head of the Sales Accounting Division and assistant treasurer.

WIRE WHEEL SALES CO. LEASES NEW WAREHOUSE

Newark, N. J., Aug. 20.—The Wire Wheel Repair and Sales Company, Inc., of 252 Central Ave., this city, which has ranked first in volume of purchases among all Budd Wheel Company distributors in this county, has rented a large warehouse a block from its present quarters to take care of its stock and to allow more floor space in its service station.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

AUTOMOTIVE STEEL BUYING AIDS PLANTS IN MAHONING VALLEY

(Continued from Page 1)

duction of automobile steels during the next three or four weeks.

In the current week both strip and automobile sheet mill operations are higher than a week ago, and further gains are expected. Republic Steel Corporation is operating a third of its strip mills at its Warren plant, while none were operating a week ago. Eight sheet mills are operating for that company at Niles, O.

At mid-week it was estimated that 60 per cent. of the district's capacity for making autobody sheets was engaged, an increase of perhaps 15 per cent. Small orders from various small customers account for the increase, with buying of the larger interests in the automotive industry rather indifferent. Purchases of steel by smaller consumers generally is a sign of an upward trend, however, and Youngstown mill managers believe that in this case a broadening of buying in fair volume is indicated.

Production of all types of sheets in the Mahoning Valley mills is now averaging 30 per cent., or several per cent. higher than a week ago.

Activity in manufacture of pipe, another principal product of the Youngstown steel district, continues to be somewhat more pronounced than production of flat steels. Three of four electric weld pipe mills in the district are operating, and one of two seamless mills is under power.

DIESEL-POWERED MODELS PLANNED BY INDIANA TRUCK

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here. Fuel costs for the trip were given as below $10. The truck carried a gross load of 16,000 pounds and the engine was not permitted to stop during the entire run.

The motor used in the transport was designed by Clessie L. Cummins of the Cummins Engine Company, Columbus, Ind., and was similar to that used in the 500 mile race here May 30 which was completed without a pit stop. The race car which was driven by Dave Evans comprised part of the cargo on the cross-country run. Evans also was chief pilot of the truck.

The statement issud by Mr. York indicated plans were being formulated for the production of four and six cylinder Diesel trucks and that these would be ready for the market by the middle of October. Orders also are already being received for this type of equipment, he said.

B. F. GOODRICH REPORTS NET LOSS OF $288,483

New York, Aug. 20.—B. F. Goodrich Company and subsidiaries report for six months ended June 30, 1931, net loss of $288,483 after depreciation, minority interest, etc., and after writing down raw material on hand and on commitment to the lower cost or market on June 30 last, comparing with net loss of $1,292,986 in first half of 1930.

Consolidated net sales in the six months ended June 30 were $59,878,000, compared with $78,007,291 in the like period of 1930.

In accordance with the usual mid-year practice of the company, the material content of semi-finished and finished goods was valued at cost.

ERO MFG. CO. ESTABLISHES BRANCH IN LOS ANGELES

Los Angeles, Aug. 20.—Ero Manufacturing Company, manufacturer of automobile tire and seat covers, has established a branch at 226 East 16th St. Harold F. Leopold, president of the company, has returned to the East after completing negotiations for the Los Angeles branch. L. W. G. Parker, former general manager of the Parker & Waterman Manufacturing Company, will be manager of the Los Angeles Ero branch.

SPARKS from DETROIT

Boats and Boatmen

* * *

Gar Wood One of Us

* * *

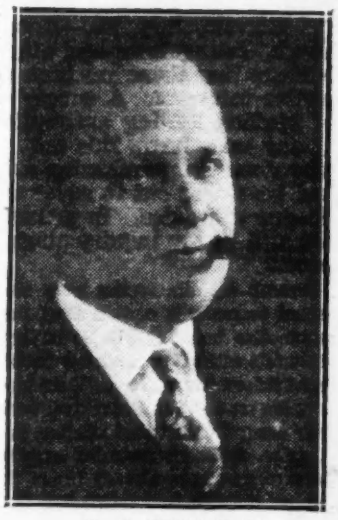
H. H. Shuart

* * *

Bill Sturm at the Helm

"Eddie" Edenburn—Guest Conductor

IT is natural that Eddie Edenburn should be "all wet" in his column today. Eddie not only is manager of both the Detroit Automobile Dealers' Association and the Michigan Automotive Trade Association, but he also is chairman of the Harmsworth Cup regatta, that motor boat feature Detroit stages around Labor Day. Oh, yes, Eddie also has handled the 500-mile race at Indianapolis for many years as representative of the contest board of the American Automobile Association. And in his younger days he was automobile editor of the Indianapolis Star. Outside of that and writing this column, he has nothing to do.—C. G. S.



W. D. EDENBURN

* * *

NEVER having been a column conductor, I feel free to take liberties that Chris Sinsabaugh might not countenance.

* * *

THE seventeenth running of the British International (Harmsworth) Trophy is of great interest to the industry in Detroit, and in this competition Commodore Gar Wood will carry the hopes of the United States, while Kaye Don will be the English standard bearer. The industry's interest, however, will be greater in the boats than it will be in the men. Commodore Wood has not disclosed his plans for the defense of the trophy, and this will be the sixth time that he has met European challengers since he lifted the trophy and brought it to the United States in 1920. Commodore Wood smiles when he is asked as to his defense of the trophy, but, if he was not confident, his famous smile would not appear, and so the industry can rest assured that he will have at least two boats of greater speed than ever before to meet the challenging Miss England II.

* * *

MISS ENGLAND II. is the largest hydroplane to compete for the Harmsworth in the twenty-eight years of its existence. She is 37 feet long and has a beam of 11 feet 6 inches and weighs more than four tons. She is powered with two Rolls-Royce Schneider Cup type twelve-cylinder engines, super-charged and rated at 2,000 horse power each. Unlike other large hydroplanes, the Rolls-Royce engines are geared to one gear box, driving a single 15-inch two-bladed propellor at a top speed of 12,000 revolutions per minute.

* * *

SPEAKING of the automotive industry and Commodore Gar Wood, probably very few of the readers know that, before he became a famous motor boat pilot, Wood was a Ford dealer in Minneapolis and operated a machine shop in conjunction with his dealership. While engaged in this endeavor he conceived the idea of hydraulic hoists for motor trucks, which he designed, patented and marketed. Minneapolis was too far from the seat of the industry, and he moved his plant and his family to Detroit early in 1916. By the time the United States entered the war he was working night and day supplying these hoists to the allies for the dump trucks used in the World War, and thousands of his hoists were used by the United States in its military operations. He has been engaged in a number of other trades, including the building of stock runabouts and super-express cruisers.

* * *

PARTICULARLY in the marine field has his influence been brought to bear on the industry. The advent of the Liberty engine for aircraft convinced Commodore Wood that lighter engines with as great power were feasible for marine purposes, and in the years since the war his activities in the marine engine field have brought marked reduction in weight and increase in power and speed. Not only did he turn his attention to the engines in the marine field, but he proved to the naval architects that lighter construction and

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BAUSH MACHINE TOOL GETS BIG FORD ORDER; CALLS BACK EMPLOYEES

Springfield, Mass., Aug. 20.—Baush Machine Tool Company has received an order for fourteen vertical multiple-spindle drills from the Ford Motor Company of Detroit. This is said to be the biggest order that has come to the local firm this year and it is hastening to get into production on a job that will require day and night operation for two or three months in order to make the desired deliveries, which it is understood will be used on the production of a new model Ford.

As the Ford concern wants deliveries in the shortest possible time, the local company is calling back engineers and draftsmen formerly employed there and is getting assistance from other local plants to the end of hastening the completion of preliminary work. Word of this order, spreading in industrial circles, has had an encouraging effect

WISCONSIN AXLES

Sudden starts, quick stops—loads, speed and jolts. All the abuse a truck can get. Call it a test — but it's all in the day's work for Wisconsin Axles.

WISCONSIN AXLE CO.
Oshkosh Wisconsin

SALES GAIN REPORTED BY NEW YORK WILLYS BRANCH IN HALF YEAR

New York, Aug. 20.—Willys-Overland registered more automobiles in the metropolitan area the first six months of this year than in the same period of 1930, A. W. Pickett, New York branch manager of Wilys-Overland, Inc., announced today.

"July deliveries this year exceeded July deliveries last year, and from all indications August, 1931, will be a better August for Willys-Overland than last year," Mr. Pickett stated.

"We believe that the performance of the Willys Six in setting up the new A. A. A. speed records for stock cars has gone a long way to convince motorists of the real value in this particular car."

PLANS NEW BUS LINE

Kane, Pa., Aug. 20.—Vincent G. Schaut of St. Marys, Pa., has plans in progress to shortly establish and operate an interurban bus line between Kane and St. Marys, Pa., traversing the Buffalo-Pittsburgh Highway. Application for a franchise has been made to the Public Service Commission.

AWAITING ARRIVAL OF NEWEST FORD SHIP AT EDGEWATER PLANT

Edgewater, N. J., Aug. 20.—The newest addition to the Ford Motor Company marine fleet the Edgewater, is en route for the local assembly plant with the largest cargo ever moved through the New York State Canal System.

The Edgewater is one of two specially designed craft for service between Detroit, Green Island, N. Y. and the New Jersey port.

The freighter was built according to maximum dimensions and will clear the smaller water locks in the canal by a few inches. All above deck equipments is collapsible in order to permit pasing under the lowest bridges.

With a crew of twenty-two and a cargo of 2,100 tons, the craft got away without incident on its maiden voyage. The ship is 300 feet long with a 43-foot beam and a cargo capacity of 145,000 cubic feet.

Mayor John F. Dinan, who with a number of other officials will be on hand to greet the Edgewater, when it ties up at the dock, has requested that its arrival be marked with a siren salute from the steamers now discharging cargoes at the local factories and he has asked the business heads of the borough also to have flags displayed from their plants.

NEW CHEVROLET DEALERSHIP

Hampton, Ia., Aug. 20.—O. O. Ladwig, Sumner, and Ben Cole, Waverly, are to open a Chevrolet dealership here in connection with a general garage and service station business.

BROCKWAY-INDIANA TRUCKS

"Deliver the Goods"

Brockway-Indianas go farther to assure the utmost return on truck investment in all vocations requiring the use of motor trucks.

Transportation needs of a highly specialized nature cannot be adequately met without a thorough understanding and long experience.

Twenty-two years' experience in the production of master motor trucks is built into every Brockway-Indiana chassis.

BROCKWAY MOTOR TRUCK CORP.
General Offices
Cortland - - - - New York

Cumulative New Commercial Car Registration Statistics, July, 1931

Returns for today: Alabama, Connecticut, Maryland, Nebraska, New Jersey, Virginia and Washington.

Figures in this table are from R. L. Polk & Co. of Detroit, with the exception of Illinois, which are supplied by the Robinson Advertising Service, Springfield, Ill., and New Jersey, which are furnished by the New Jersey Motor List Co., New Car Division, Trenton, N. J. Some of this data has been published previously, but it is given here complete for the convenience of our subscribers. Reades desiring county, city or town lists, or lists in any given section, may obtain these by addressing any of these three companies.

In this table 26 states and the District of Columbia.

States	Autocar	Brockway-Indiana	Chevrolet	Diamond-T	Dodge	Federal	Ford	G. M. C.	International	La France-Republic	Mack	Pierce-Arrow	Reo	Sterling	Stewart	Studebaker	Whippet	White	Willys	Willys-Knight	Miscellaneous	Totals	States
Alabama			154		4		104	1	5				1			1		1				271	Ala.
Arkansas		1	177		6		176	2	34				1									397	Ark.
Connecticut	3	3	148	5	40	8	224	15	33	1	4		31	1	2	3		3	11		3	538	Conn.
Delaware			26		1		31	2	16				4			1						81	Dela.
Florida		1	108	1	4	1	174		5		1		3					2				300	Florida
Idaho			36		5		58		8				1					1			1	110	Idaho
Illinois	1	1	558	35	67	15	630	28	159	1	14		15	5	1	15		14	13	3	50	1625	Illinois
Indiana		8	210	3	33	2	210	27	57		1		12		5	10		2	9		20	609	Indiana
Maryland	6	2	135	10	19	5	190	16	40	1	6	1	16		1	2		6	2		15	473	Md.
Minnesota			258	9	36	1	269	16	76	5	6		23	1		5		3	9		4	721	Minn.
Missouri	2	1	268	4	18	3	310	21	60		7		12	8	2	6		5	7		11	745	Missouri
Montana			59	2	8	2	117	4	20				3			4		1			6	226	Mont.
Nebraska			148	2	16	4	160	5	56		2		7			5	1		7		2	415	Neb.
New Hamp		3	42	1	2	1	117	3	3		3		4		1	1		1				182	N Hamp
New Jersey	6	6	254	39	44	6	408	35	60	1	15	1	35	2	7	7		16	4		19	965	N. J.
North Car.			358	4	33	2	387	10	38	2	2		5			1		4	5		8	859	No. Car.
No. Dakota			23	2	3		29	2	23				1			3				1		87	No. D.
Ohio	6	4	401	4	64	6	600	31	89	7	8		41	1	7	18		20	21		50	1378	Ohio
Rhode Island	2		44		11	5	98	14	10		3		9	1	1	3					2	203	R'de Isl.
So. Carolina			153		6	1	122	7	23		1		1			1		1				316	S. Caro.
South Dakota			25	5	8		39	1	19				1			16			1		1	116	S. D.
Utah			39		7		48	3	8		1		4			2		1			1	114	Utah
Virginia	1	2	232	4	19	4	272	16	34	1	3		4			3		6	1		4	606	Va.
Washington			175	3	20	1	309	19	44		4		17	1		12		7	8	1	23	644	Wash.
West Virginia			117	2	14		168	12	39	1			12	1		5			11		9	391	W. Va.
Wisconsin			571	41	57	9	487	30	140	4	7	1	24	9	5	23	2	3	48		25	1486	Wis.
Dist. of Col.	2		43	6	2	1	100	14	7			1						3				179	D. C.
Totals	29	32	4762	182	547	77	5837	334	1106	24	88	4	287	30	32	147	3	100	157	5	254	14037	Totals
Ala., 1930			136		1	1	178	5	4		2	1	3					2	1			334	Ala., '30
Ark., 1930		2	236		4		310	6	38		1		1				2	6			2	608	Ark., '30
Conn., 1930	2	9	109	7	32	5	216	16	21		20		18	2	14	4		3	1	1	16	496	Ct., 1930
Dela., 1930	1	2	32		2		56	7	6				1		1		1	1	1			111	Del., '30
Fla., 1930		7	99		3		233	2	19		3		3					5	2		2	378	Fla., '30
Idaho, '30			52		8		92	13	12	1			4					1	1	2	3	189	Idaho 30
Ill., 1930	5	16	516	41	50	14	874	34	110	2	17		19	8	1		8	21	21		64	1821	Ill., '30
Indiana, '30		11	132	2	12	2	335	19	59				6		12	3	3		2	1	7	605	Ind., '30
Maryland, '30	5	8	105	11	6	1	244	5	22	2	20		4	2	6	2		16	1	1	8	469	Md., '30
Minn., 1930		3	255	11	22	4	502	21	94		2		18			1	5	2	21		21	982	Min.,'30
Missouri, '30	5	8	269	9	25	4	358	14	70		13		8	2	1	1	5	2	3		25	822	Mo., '30
Montana, '30			68		3	1	123	3	33				5				2	1	1		3	243	Mont 30
Neb., 1930			275	3	15	1	367	7	87		2		4			1		2	9	1	11	785	Neb., '30
N. Hamp., '30		1	39	5	6		121	4	5	1	7		5		1	1		1	1		4	202	N.H., '30
N. J., 1930	14	30	265	13	42	7	616	37	34	2	27		18	4	13	4	2	29		2	42	1201	N. J., '30
No. Car., '30	1		224	1	11	3	364	4	14		2		2				1	2	6		9	644	N. C., 30
N. Dak'a, '30			50	3	2		74	1	46				5						2		3	186	N. D., '30
Ohio, '30	14	13	345	10	59	9	901	42	121	1	12		22	1	11	4	9	55	15	2	70	1716	Ohio '30
Rhode Isl., '30	3	3	41	2	4	1	124	9	5		1		3	1	1	1		2			2	203	R. I., '30
S. C., 1930		1	125			2	171	3	10									1			12	325	S. C., '30
S. D., 1930		3	71	6	7		126	3	50				5				2		5		3	281	S. D.,'30
Utah, 1930			48		4		127	4	6		1		1								5	196	Ut'h, '30
Va., 1930	2	2	239		4	9	333	11	17	5	5				1		2	6	5		25	666	Va., '30
Wash., 1930			203		13		443	33	45		7		13	2		2		20	4		45	830	Wash.,
W. Va., 1930		6	144	3	17	2	202	17	42	1			8			2		2	4		14	464	W.V.,'30
Wis., 1930		8	564	23	40	11	784	37	125		4		23	4	8	4	9	3	24	1	29	1701	Wis., '30
D. of Col., '30	5		27	3	2		105	6	7				1	1				3			5	165	D.C., '30
Totals	57	133	4669	153	394	77	8379	363	1102	15	146	1	200	27	70	30	51	185	130	11	439	16623	Totals

Automotive Daily News

"Of, By and For the Entire Automotive Industry"

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Who Pays the Bill?

SOME time ago a commentator in a trade magazine made a remark to the effect that "the bill for improved factory equipment is paid by the competitors of the company installing the machines or devices increasing its plant efficiency."

There never was a truer word spoken. The plant management which invests wisely in improved equipment can take business away from the company which economizes and stands pat on less efficient production machinery.

If there was ever a period of opportunity along this line beckoning to industrial organizations, it is now. Prices for machine tools and other industrial equipment never have been lower in recent times. Wise expenditure now will place any company in a commanding position to go out after increased volume when revival gets under way.

At a time like this well-managed companies naturally tend to conserve their resources. They may even cut dividends to maintain a sound cash reserve. But wise expenditures to modernize and speed up plant operations, made now, are long term investments of the most unexceptionable character.

The American machine tool industry is one of the manufacturing units which has helped this country write its name high in the commercial roll of the world. The machine tool industry is the basis of our national mass production system. At the present time this industry is very far from being busy. It can carry out ideas and modernization campaigns under unusually satisfactory conditions. Our industrial organizations which are in a position to do so will be well advised to investigate the opportunities of making one of the soundest capital investments that they ever have had a chance to grasp.

Restraint

SELF-CONTROL is one of the most valuable qualities of human character and it also has its application in the industrial world. In industry we need restraint in handling affairs during periods of prosperity and we need firmness, or fortitude, if you will, in dealing with periods of depression.

Several months ago Alfred P. Sloan, Jr., president of General Motors, made the remark that "If a corporation's position is sound industrially and financially, I think it is justified in times like these to pay out all its earnings in dividends and even go a step further and dip into surplus in order to continue dividend disbursements."

To make such action as Mr. Sloan recommends possible, the company must have exercised restraint during preceding periods of prosperity. If it had insisted on passing on to stockholders all its earnings during prosperous times, obviously it could not continue dividends during lean periods, especially if the needed amount had not been entirely earned.

As an example of how this works, we may point to Mr. Sloan's own company, General Motors. During the prosperous period of 1928 and 1929, General Motors paid out to stockholders about 60 per cent. of what it had earned. The rest went to insure the corporation a sound position with adequate reserves.

American industry in general can very well use a scientific method of distributing its earnings during periods of prosperity to take care of the inevitable cycles of decline. If we do not learn this sort of industrial or, better, financial restraint, we are going to have it thrust upon us in no pleasant fashion.

REPEATS SUCCESSFUL USED CAR SALE

FOLLOWING the success of his last used car sale, conducted three months previously, Freeman A. McKenzie, Ford dealer in Long Branch, Cal., is conducting another used car sale along the same lines as the first sale.

The first used car sale resulted in the moving of 153 used cars in twenty days.

The used car sale, known as the "20 Cent Sale," is being conducted on the firm's used car lot at 530 American Ave. On the opening day, at 9 a. m., one car was sold for 20 cents. Other cars were sold at $179.20, $399.20, etc.

Large advertisements were taken in newspapers to announce the sale. In addition, cardboard announcements were printed and prominently displayed. The used car lot is kept open late at night and is lighted by floodlights placed at the curb and spotlighting the cars on the lot, so that both pedestrians and motorists are bound to notice the sale. A staff of salesmen is present at all times.

300 CHEVROLET DEALERS TAKE PART IN IOWA RALLY

Mason City, Ia., Aug. 20.—A. A. Parker, Des Moines, zone manager for the Chevrolet Motor Company in this district; W. F. Cornell, Des Moines, truck sales manager; Harry Schooley, Des Moines, sales promotion manager; L. Bierck, Chicago regional office, and K. E. Staley, Des Moines, business manager, were principal speakers at a rally of 300 Chevrolet dealers and salesmen from sixty-five middle Iowa counties last week.

The group was entertained in the afternoon at Clear Lake, where forty prizes ranging from trunk and set of silver to cigarette lighters and blankets were awarded at golf and other sports contests.

NEWARK, N. J., CADILLAC OFFICIALS USE PLANE

Newark, N. J., Aug. 20.—Clarence E. Fisher, general manager; Clarence R. Schuyler, sales manager, and Charles E. Fisher, sales director of the Cadillac Motor Car Company have returned after an aerial trip to the Cadillac Car Company, Detroit. The principal object of the visit was to present to Frederick Fisher the Napoleonic coach model made by Walter Bluemenschied of the local Cadillac mechanical department. The outgoing trip was made from the Newark Airport to Cleveland, and thence to Detroit by boat. The return trip was made all the way by air.

REPORTS JULY GAIN

Newark, N. J., Aug. 20.—The Bonnell-Mason Company, local Oakland-Pontiac distributor, reports that July business in Newark exceeded June sales by approximately 20 per cent.

COMING EVENTS

SEPTEMBER

1- 3—**Cleveland, O.** Hotel Statler, Society of Automotive Engineers, twentieth annual aeronautical meeting in conjunction with National Air races.

8-17—**Utrecht, Holland.** Utrecht Fair, bus and truck show.

16-17—**Atlantic City, N. J.** National Petroleum Association, annual meeting. Hotel Traymore.

20-26—**Springfield, Mass.** Eastern States Exposition.

21-25—**Boston, Mass.** American Welding Society, meeting. The following societies will participate: American Society for Steel Treating, American Welding Society, Iron and Steel Division, A. S. M. E.; Machine Shop Practice Division, A. S. M. E.; Iron and Steel Division, A. I. M. E.; Institute of Metals, A. I. M. E.

28-29—**Atlantic City, N. J.** National Association of Motor Bus Operators, fifth annual meeting, Hotel Ambassador.

26-Oct. 2—**Atlantic City, N. J.** American Electric Railway Association, annual meeting.

OCTOBER

1-11—**Paris, France.** International Automobile Salon.

2- 3—**Houston, Tex.** American Institute of Mining and Metallurgical Engineers, petroleum division meeting.

12-16—**Chicago, Ill.** National Safety Council.

14-16—**Pittsburgh, Pa.** Society of Industrial Engineers, convention.

13-24—**London, England.** International Motor Exhibition, Olympia Hall.

22-28—**Prague, Czecho-Slovakia.** International Automobile Exposition.

L. P. STEUART BUILDING NEW $325,000 HOME

Washington, Aug. 20.—A new home for L. P. Steuart, Inc., automobile distributor, is now under construction on P Street, between 14th and 15th Streets, at an estimated cost for site and building of $325,000. It will be completed by the first of 1932.

An unusual feature of the building's design is that the entrance will be through a forty-foot "safety lane," which will lead to a ramp running to the roof.

The building will have more than 80,000 square feet of floor space. The first floor will accommodate the sales quarters and additional service facilities. The second floor will be given over to display rooms and the general offices of officials of the concern. The entire third floor will be used as a shop, for which a large quantity of machinery has been ordered. The roof will be employed for storage.

CHRYSLER'S CHATTANOOGA DISTRIBUTOR, PHILLIPS CO.

Chattanooga, Tenn., Aug. 20.—The Phillips Auto Company, Inc., newly appointed distributor for Chrysler and Plymouth in this territory, has opened for business at 309 Broad St. W. O. Phillips, president of the new company, was formerly associated with the Chattanooga Auto Company, and for the last two years has been in Jacksonville, Fla., in the automobile business. R. W. Phillips will shortly join the new organization as secretary and treasurer. Buck Andrews,, former service manager of the Chattanooga Auto Company, will act as service manager.

DUCKWORTH PROMOTED

Charlotte, N. C., Aug. 20.—W. F. Duckworth, for the past four years assistant manager of the local Ford plant and acting manager since the transfer of F. A. Atcheson, was informed of his promotion to branch manager at a luncheon of 400 Ford dealers and executives.

GETS DE SOTO FRANCHISE

Raleigh, N. C., Aug. 20.—Chipley Motor Company, Roy M. Chipley proprietor, 325 South Blount St., has acquired the franchise for distribution of De Soto and Plymouth automobiles in the Raleigh territory.

Three Buick Dealers Rounding Out 28 Years Of Company Service

THREE Buick dealers are this year rounding out twenty-eight years of service with the Buick sales organization. Since 1903, or for nearly a generation and a half, they have been selling and servicing Buick cars.

These dealers, located in Pennsylvania, Indiana and Oregon, were not only pioneers in the automobile field for Buick, but for the industry. With others following close behind in length of service, they formed the nucleus upon which the present strong Buick dealership of nearly 3,000 members was built, according to C. W. Churchill, general sales manager of the Buick Motor Company.

Twenty-four other dealers in various parts of the country are completing in 1931 a quarter century and more with Buick. Eight have represented the company for twenty-seven years, eight for twenty-six years and eight for twenty-five. Theodore Roosevelt was President of the United States, and the picturesque exploits of the Rough Riders at San Juan Hill were still fresh in public memory when these Buick dealers displayed the early models of the valve-in-head engined automobile on their new showroom floors.

All told, there are 376 dealers, located in communities of all sizes, who have represented Buick for fifteen years and more.

"In point of numbers and continuous service the Buick dealer organization is undoubtedly the oldest in the country," Mr. Churchill states. "It is due in great measure to the stability of our sales and service representation that so many thousands of motorists renew their orders for Buicks from year to year.

"The part the Buick factory plays in thus holding the loyalty of both its dealer body and the public is in the building of automobiles that represent the best engineering thought and that give the most satisfactory performance that we can put into them."

SPARKS *from* DETROIT

(Continued from Page 2)

different lines would produce the present type of commuter cruiser now popular on Long Island Sound, the Great Lakes and other waterways where marine transportation is more convenient than to operate a motor car.

* * *

H. H. SHUART, who has been the operating executive of the Detroit Auto Show since 1917 and an executive of the show organization since 1912, is busy this summer in the organization of the Industrial Exposition, which is a new feature of the Michigan State Fair. The automotive industry has been only meagerly represented at the Michigan State Fair in the last decade, but this year, under Shuart's direction, the fair is to have as much, if not more, prominence given to the industrial products of the state as is given to its agricultural achievements. There has been a growing sentiment in the rural sections of Michigan that, because of Detroit's industrial atmosphere, the Michigan State Fair should be moved to an agricultural atmosphere. Under the leadership of Harry A. McDonald, as chairman of a committee of prominent business men and industrial leaders, this industrial exposition is being carried forward. Not only will it show the products of Michigan's manufacturers, but there will be a number of exhibits showing the processes of manufacture.

* * *

WILLIAM F. (BILL) STURM, who started Cannon Ball Baker on his way to fame as a transcontinental automobile driver almost two decades ago, has been selected by Lord Wakefield of Hythe to represent him in his challenge for the Harmsworth Trophy at Detroit. Sturm, in the years since he and Baker made the transcontinental run, has managed such famous automobile race drivers as Joe Dawson, the late Major Sir Henry O. D. Segrave, the late Frank Lockhart, Capt. Sir Malcolm Campbell and Kaye Don. The last four named were under his direction when they slipped over the sands of Daytona Beach in the pursuit of the world's straight-away automobile record. It will be the first time, however, that Sturm has handled a motor boat competition, and he is busily engaged in learning all about maritime regulations of Canada and the United States, the customs laws of both countries and familiarizing himself with racing rules.

Major Specifications and Mechanical Details of 1931 Commercial Cars

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H. P.	Max. Brake H. P. and Peak R. P. M.	Type Camshaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electr'l System	Make Transmission	No. Spds. For.	Rear Axle Make	Type Final Drive	Final Gear Reduction	Type Service Brakes	Area Service Brakes	Standard Wheel Base	Chassis Wgt.	Standard Tire Sizes Front	Rear
*Am La France Chief	2½	3650	Own	L	6	3¾x5	331.0	33.7	65@2100	G	G & O	Borg	Spic	Ross	Str	Vac	DR	Own	4	Tim	Wo	31.2	B4IMV	—	156	6200	32x6	32x6D
*Am. La France Chieftain	3-4	6725	Own	L	6	4½x6	411.0	40.8	85@1800	G	G & O	Borg	Spic	Ross	Zen	Vac	DR	Own	4	Tim	Wo	28.8	B4IMV	—	175	7200	36x8S	36x8D
Am. La France Big Chief	6	5500	Own	L	6	4½x5½	572	48.6	115@1600	—	—	Own	—	Ross	Zen	Vac	DR	Own	4	Own	2 R	32.8	W4IA	—	226	10600	40x8S	40x8SD
Austin	400	475	Own	L	4	2.2x3	45.6	7.8	13@3000	G	Hex	Rock	Spic	Own	Tll	Gra	Aut	W-G	3	Sal	Sp	5.25	O4M	76.5	75	1210	3.75x18	3.75x18
Autocar A	1½-2	3200	Own	L	6	4 x4¾	358.0	38.4	82@2400	G	Per	Long	Spic	Ross	Str	Vac	DR	Br-L	4	Own	Sp	27.9	LO4ID	460	150	5060	34x7	34x7
Autocar D	2-2½	3500	Own	L	6	4 x4¾	358.0	38.4	82@2400	G	Per	Long	Spic	Ross	Str	Vac	DR	Br-L	4	Own	2 R	33 5	LO4ID	460	150	5300	34x7	34x7D
†Autocar SH	2½-3	4300	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2 R	44.0	O2IM	328	114	6770	34x7	34x7D
Autocar SCH	2½-3	4300	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	44.0	O2IM	328	157	6860	34x7	34x7D
†Autocar H	3	4100	Own	L	6	4¼x5½	350.0	32.4	45@1450	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2 R	48.6	O2IM	328	114	6770	34x7	34x7D
†Autocar HS	3	4100	Own	L	6	4¼x5½	350.0	32.4	45@1450	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2 R	54.3	O2IM	516	114	7900	40x8	40x8D
†Autocar HS	3½	4600	Own	L	6	4½x5½	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2 R	54.3	O2IM	516	114	7900	40x8	40x8D
†Autocar SHS	3-3½	4800	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	54.3	O2IM	516	157	8180	40x8	40x8D
Autocar SCHS	3-3½	4800	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	41.2	OL4IH	574	174	7990	36x8	36x8D
Autocar N	3-3½	4600	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	12	Own	2 R	101.1	LO4ID	602	192	8900	36x8	36x8D
Autocar TEA	3-3½	5350	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	12	Own	2 R	101.3	LO4ID	602	192	9300	38x9	38x9D
Autocar TFA	3½-5	6100	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	51.7	O2IM	516	172	9500	42x9	42x9D
Autocar C	3½-5	5500	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2R	51.7	LO41V	670	172	10500	36x7S	40x8SD
Autocar CE	7½	6000	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2R	51.7	LT4DV	674	173	11000	36x7S	40x8SD
Autocar F	7½	6800	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	Own	Br-L	Spic	Ross	Str	Vac	DR	Br-L	7	Tim	Wo	94.0	LT4DV	674	173	11000	36x7S	40x8SD
*Autocar G	10	9000*	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	Own	Br-L	Spic	Ross	Str	Vac	DR	Br-L	7	Tim	Wo	100.0	T6IA	720	171	13000	36x8	36x8D
Brockway 60	*6000	995	Con	L	6	3⅜x4	214.7	27.3	61@3000	C	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	3	Col	Sp	19.8	B4IM	297	132	*3200	30x5	30x5
Brockway 65	6500	1195	Con	L	6	3⅜x4⅝	248.2	27.3	65@2700	C	G & O	Borg	Spic	Ross	Zen	Vac	Aut	Br-L	3	Col	Sp	21.3	C4IM	244	137	3400	30x5	30x5
Brockway 75	7500	1290	Con	L	6	3⅜x4⅝	248.2	27.3	65@2700	C	G & O	Borg	Spic	Ross	Zen	Vac	Aut	Br-L	4	Col	Sp	25.6	C4IM	244	137	3450	32x6	32x6
Brockway 90	9000	1525	Con	L	6	3⅜x4⅝	248.2	27.3	65@2700	C	G & O	Borg	Spic	Ross	Zen	Vac	Aut	Br-L	4	Col	Sp	20.9	C4IM	292	149	4080	32x6	32x6
Brockway 120	12000	1990	Con	H	6	4 x4⅛	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Tim	Sp	31.3	L4IH	353	156	5200	32x6	32x6D
Brockway 140	14000	2495	Con	H	6	4 x4⅛	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	35.3	L4IHV	356	156	5500	32x6	32x6D
Brockway 141	17000	2935	Con	H	6	4 x4⅛	311.0	38.4	73@2400	C	G & G	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	46.2	L4IHV	356	170	6200	32x6	32x6D
Brockway 170	17000	3160	Con	H	6	4⅛x4¾	380.9	40.8	89@2400	C	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	46.6	L4IHV	380	170	6800	32x6	32x6D
Brockway 175	17500	3660	Con	H	6	4⅜x4¾	427.5	45.9	100@2400	C	G & O	—	Spic	Ross	Zen	P	Aut	—	5	Wis	2 R	45.3	L4IHV	380	170	7200	34x7	34x7D
Brockway 195	19500	3820	Con	H	6	4⅛x4¾	380.9	40.8	89@2400	C	Long	Borg	Spic	Ross	Zen	P	Aut	Br-L	8	Wis	2 R	49.5	L4IHV	380	170	7500	34x7	34x7D
Brockway 190	19000	4185	Con	H	6	4⅛x4¾	380.9	40.8	89@2400	C	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	78.6	T2IMV	471	168½	7625	34x7	34x7D
Brockway 220	22000	4560	Con	H	6	4⅛x4¾	380.9	40.8	89@2400	C	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	50.7	L4IHV	546	170	8200	36x8	36x8D
Brockway 250	25000	5950	Con	H	6	4⅜x4¾	427.5	45.9	100@2400	C	Long	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Wo	63.7	LT4IVA	664	182	10000	40x8	40x8D
Brockway 290	30000	7250	Con	L	6	4¾x5¾	611.4	54.1	116@1800	C	Long	Br-L	Spic	Ross	Str	P	L-N	Br-L	7	Tim	Wo	95.0	T4IA	676	182	10750	38x7P	40x14S
*Brockway 640	40000	9700	Con	L	6	4¾x5¾	611.4	54.1	116@1800	C	Long	Br-L	Spic	Ross	Str	P	L-N	Br-L	7	Tim	Wo	90.9	T4IA	864	212	14000	38x7P	36x10S
Chevrolet	½	355	Own	H	6	3⅛x3¾	194.0	26.3	50@2600	G	Har	Own	Own	Own	Car	P	DR	Own	3	Own	Sp	13.6	O4IM	101	109	*1880	19x4.75	19x4.75
Chevrolet	1½	590	Own	H	6	3⅛x3¾	194.0	26.3	50@2600	G	Har	Own	Own	Own	Car	P	DR	Own	4	Own	Sp	33.4	O4IM	170	157	3015	30x5	30x5D
Chevrolet	1½	520	Own	H	6	3⅛x3¾	194.0	26.3	50@2600	G	Har	Own	Own	Own	Car	P	DR	Own	4	Own	Sp	33.4	——	—	131	2700	30x5	32x6
Commerce Series S 11	1	1600	Bud	L	8	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Col	Sp	25.5	L4IH	297	142	3900	30x5P	30x5P
Commerce Series S 11	1½	1900	Bud	L	8	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Sp	29.2	L4IH	297	162	4300	30x5P	30x5DP
Commerce Series 40	1½	2990	Bud	L	8	3⅝x5	309.6	31.5	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Wo	34.8	L4IH	394	168	4700	34x5P	34x5DP
Commerce Series S 11	2	2030	Bud	L	8	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Sp	29.2	L4IH	297	162	4500	32x6P	32x6D
Commerce Series 40	2	3240	Bud	L	6	3⅝x5	309.6	31.5	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Wo	34.6	L4IH	394	168	4900	32x6	36x6D
Commerce Series 40	2½	3240	Bud	L	6	3⅝x5	309.6	31.5	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Wo	34.8	L4IH	394	168	5100	36x6P	36x6D
Commerce Series 60	2½	4580	Bud	L	6	4⅛x5½	410.9	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Tim	Wo	63.0	L4IH	584	175	7000	36x6P	36x6D
Commerce Series 60	3	4680	Bud	L	6	4⅛x5½	410.9	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Tim	Wo	63.0	L4IH	584	175	7100	36x6P	38x7D
Commerce Series 80	3½	5250	Bud	L	6	4⅛x5½	411.0	40.8	83@2100	G	Long	Own	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	98.2	——	—	175	8200	36x6S	36x12S
Commerce Series 80	4	5330	Bud	L	6	4⅛x5½	411.0	40.8	83@2100	G	Long	Own	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	98.2	——	—	175	8400	36x6S	36x14S
Commerce Series 100	5	5830	Bud	L	6	4⅛x5½	411.0	40.8	83@2100	G	Long	Own	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	95.0	——	—	175	9600	36x6S	40x14S
Day Elder 60	1	1095	Con	L	6	3⅜x4	214.7	27.3	61@3000	C	G & O	Borg	Spic	Ross	Zen	P	DR	W-G	4	Tim	Sp	36.3	B4IM	241	135	*3200	20x6.00B	20x6.50B
Day Elder 85	1½	1645	Con	L	6	3⅜x4⅝	248.3	27.3	65@2700	C	Per	Borg	Spic	Ross	Zen	P	DR	W-G	4	Tim	Sp	42.3	L4IH	229	135	3750	20x6.00B	20x6.50DB
Day Elder 110	2	2095	Con	L	6	3⅜x4⅝	248.3	27.3	65@2700	C	Per	Br-L	Spic	Ross	Zen	P	DR	Br-L	4	Tim	Sp	44.9	L4IH	306	156	4600	20x7.00B	20x7.00DB
Day Elder 130	2½	2895	Con	H	6	4 x4⅛	311.0	38.4	73@2400	C	Per	Br-L	Spic	Ross	Zen	P	DR	Br-L	4	Tim	Sp	40.7	L4IH	354	157	6400	20x7.50B	20x7.50DB
Day Elder 160	3	3695	Con	H	6	4 x4½	339.3	38.4	82@2400	C	Per	Br-L	Spic	Ross	Zen	P	DR	Br-L	4	Tim	Wo	36.1	L4IH	398	156	6600	20x7.50B	20x9.00DB
Day Elder 200	4	4295	Con	H	6	4 x4½	339.3	38.4	82@2400	C	Per	Br-L	Spic	Ross	Zen	P	DR	Br-L	4	Tim	Wo	43.5	L4IHV	489	156	7400	20x9.00B	20x9.00B
Day Elder 240	5	5500	Con	H	6	4⅜x4¾	427.5	45.9	100@2600	C	Per	Br-L	Blo	Ross	Zen	Vac	DR	Br-L	4	Tim	Wo	50.8	L4IHV	520	162	9300	38x9P	38x9DP
*Day Elder 285	8	6000	Con	H	6	4⅜x4¾	427.5	45.9	100@2600	C	Per	Br-L	Blo	Ross	Zen	Vac	DR	Br-L	7	Tim	Wo	71.2	L6IHV	674	164	12000	20x8.25B	20x8.25DB
*Day Elder 345	10	7500	Con	H	6	4⅜x4¾	427.5	45.9	100@2600	C	Per	Br-L	Blo	Ross	Zen	Vac	DR	Br-L	7	Tim	Wo	79.9	W61A	400	164	12500	20x9.00B	20x9.00DB
*Day Elder 402	12	9000	Con	L	6	4¾x5¾	611.4	54.2	127@2300	G	Per	Br-L	Blo	Ross	Zen	P	DR	Br-L	7	Tim	Wo	84.6	W61A	490	164	14000	20x9.75B	20x9.75DB
Diamond T 216	1½	695	Her	L	6	3⅜x4½	228.0	27.3	56@2400	G	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Cla	Sp	——	L4IH	252	135½	3130	20x6.50B	20x6.50B
Diamond T 316	2	1095	Her	L	6	3⅝x4¼	263	29.4	65@2400	G	G & O	Borg	Spic	Ross	Zen	P	Aut	WG	4	Cla	Sp	——	L4IH	350	155	4400	20x6.50B	20x6.50DB
Diamond T 303	2-2½	1585	Her	L	6	3¾x4½	298.0	33.7	67@2400	G	G & O	Borg	Spic	Ross	Zen	P	Aut	Cov	4	Cla	Sp	——	L4IHV	350	159¾	5000	20x7.00B	20x7.00DB
Diamond T 551	2½-3	2250	Her	L	6	4 x4½	339.0	38.4	74@2400	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	4	Tim	Sp	——	L4IHV	408	168	5600	20x7.50B	20x7.50DB
Diamond T 504	3	2650	Her	L	6	4 x4½	339.0	38.4	74@2400	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	4	Wis	2 R	——	L4IHV	408	176½	6400	20x8.25B	20x8.25DB
Diamond T 506	3	2950	Her	L	6	4¼x4½	383.0	43.3	85@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	——	L4IHV	408	184	6400	20x8.25B	20x8.25DB
Diamond T 603	3-4	3300	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	——	L4IHV	499	169	7500	20x9.00B	20x9.00DB
Diamond T 606	3-4	3400	Her	L	6	4½x4¾	453.0	48.6	100@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	——	L4IHV	499	187½	7500	20x9.00B	20x9.00DB
Diamond T 750	4-5	4650	Her	L	6	4⅝x5½	529.0	51.3	——	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	——	W41	552	178	8300	22x9.75B	22x9.75DB
*Diamond T 801	4	4140	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Br-L	7	Own	Wo	——	L6IHV	571	189½	8300	36x8P	36x8DP
*Diamond T 1200	6	5600	Her	L	6	4½x4¾	453.3	48.6	100@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	——	T4IA	238	190	11000	34x7P	34x7DP
*Diamond T 1600	8	6220	Her	L	6	4⅝x4¾	479.0	51.3	104@2400	G	G & O	Cov	Spic-Blo	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	——	T4IA	238	190	11700	36x8P	36x8DP
*Diamond T 1601	8	6500	Wak	L	6	5 x5¾	677.4	60.0	127@2000	G	G & C	Br-L	Spic-Blo	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	——	T4IA	238	194	12500	36x8P	36x8DP
Dodge Bros. UF 10	½	435	Own	L	4	3⅝x4¾	196.0	21.0	48@2800	G	Fed	Borg	Own	W-G	Car	P	DR	Own	3	Own	Sp	14.2	L4IH	114	109	*2050	19x5.00	19x5.00
Dodge Bros. F 10	½	515	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Un	W-G	Car	P	DR	Own	3	Own	Sp	14.2	L4IH	114	109	2100	19x5.25	19x5.25
Dodge Bros. U 1	¾	490	Own	L	4	3⅝x4¼	196.0	21.0	45@2800	G	Fed	Borg	Spic	Han	Car	Vac	NE	Own	3	Own	Sp	21.6	L4IH	189	124	2260	20x6.00	20x6.00
Dodge Bros. DA 1	¾	595	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	C	Fed	Borg	Spic	Han	Zen	Vac	NE	Own	4	Own	Sp	36.8	L4IH	189	124	2360	20x6.00	20x6.00
Dodge Bros.	1	495	Own	L	4	3⅝x4¼	196.0	21.0	45@2800	G	Fed	Borg	Spic	Han	Car	Vac	NE	Own	3	Own	Sp	36.1	L4IH	205	133	2590	20x6.00	32x6
Dodge Bros.	1	595	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	C	Fed	Borg	Spic	Han	Zen	Vac	NE	Own	3	Own	Sp	33.4	L4IH	205	133	2690	20x6.00	32x6
Dodge Bros. UF 30	1½	595	Own	L	4	3⅝x4¾	196.0	21.0	48@2800	G	Fed	Borg	Cle	W-G	Car	P	DR	Own	4	Own	Sp	37.1	L4IH	120	136	2750	20x6.00	32x6
Dodge Bros. UF 31	1½	670	Own	L	4	3⅝x4¾	196.0	21.0	48@2800	G	Fed	Borg	Cle	W-G	Car	P	DR	Own		Own	Sp	32.1	L4IH	229	165	2925	20x6.00	32x6
Dodge Bros. F 31	1½	770	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Cle	W-G	Car	P	DR	Own		Own	Sp	32.1	L4IH	229	165	2975	20x6.00	32x6
Dodge Bros. F 30	1½	695	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Cle	W-G	Car	P	DR	Own	4	Own	Sp	37.1	L4IH	120	136	2800	20x6.00	32x6
Dodge Bros. F 35	1½	1425	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	G	Long	Borg	Cle	Han	Zen	P	DR	Own	4	Own	Sp	41.4	L4IH	311	140	3975	20x6.00D	20x6.00D
Dodge Bros. F 36	1½	1485	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	G	Long	Borg	Cle	Han	Zen	P	DR	Own	4	Own	Sp	41.4	L4IH	311	165	4175	20x6.00	20x6.00D
*Dodge Bros. F 40	2	1995	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	43.7	L4IH	350	150	5425	20x6.50	20x6.50D
*Dodge Bros. F 41	2	2085	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	43.7	L4IH	350	165	5465	20x6.50	20x6.50D
Dodge Bros.	3	1515	Own	L	6	3⅜x4½	241.0	27.3	78@3000	C	Long	Borg	Un	Han	Zen	Vac	NE	Own	4	Own	Sp	46.3	L4IH	382	135	4235	32x6	32x6D
Dodge Bros.	3	1565	Own	L	6	3⅜x4½	241.0	27.3	78@3000	C	Long	Borg	Un	Han	Zen	Vac	NE	Own	4	Own	Sp	41.4	L4IH	382	165	4520	32x6	32x6D
Dodge Bros.	3	1615	Own	L	6	3⅜x4½	241.0	27.3	78@3000	C	Long	Borg	Un	Han	Zen	Vac	NE	Own	4	Own	Sp	46.3	L4IH	382	185	4715	32x6	32x6D
Dodge Bros. F 60	3	2645	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	2 R	48.8	L4IH	416	146	5835	32x6	32x6D
*Dodge Bros. F 61	3	2575	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	48.8	L4IH	416	170	6075	32x6	32x6D
*Dodge Bros. F 62	3	2695	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	48.8	L4IH	416	195	6190	32x6	32x6D
Essex Com.	¾	445	Own	L	6	2¾x4½	163.0	18.2	55@3300	C	Har	Own	Spic	Gem	Mar	Vac	Aut	Own	3	Own	Sp	—	4M	..	110	*2125	20x5	20x5.50
Federal D	1½	795	Con	L	4	3⅞x4¼	200.5	24.0	48@2500	C	Long	Borg	Spic	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L4IH	377	131	*3280	20x6.00	32x6
Federal E 6	1½	895	Con	L	6	3⅜x4	215.0	27.3	60@2600	C	Long	Borg	Spic	Gem	Zen	P	DR	W-G	4	Cla	Sp	36.3	L4IH	377	132	3330	20x6.00	32x6
Federal F 7	1¾	1525	Con	L	6	3⅜x4⅝	248.0	27.3	64@2500	C	Long	Borg	Spic	Gem	Zen	P	DR	Own	4	Tim	Sp	29.2	L4IH	414	132	3810	30x5	30x5D
Federal A 6	2	1855	Con	L	6	3⅜x4⅝	248.0	27.3	64@2500	C	Long	Borg	Pet	Ross	Zen	Vac	DR	Own	4	Cla	Sp	38.5	L4IH	450	151	4635	32x6	32x6D
Federal A 6 T	2½	2185	Con	L	6	3⅜x4⅝	248.0	27.3	64@2500	C	Long	Borg	Pet	Ross	Zen	Vac	DR	Own	4	Tim	Sp	47.1	L4IHV	659	151	5185	32x6	32x6D
Federal A 6 T W	2½	2360	Con	L	6	3⅜x4⅝	248.0	27.3	64@2500	C	Long	Borg	Pet	Ross	Zen	Vac	DR	Own	4	Tim	Wo	52.8	L4IHV	659	151	5185	32x6	32x6D
*Federal D S W	2½-3	1050	Con	L	4	3⅞x4¼	200.5	24.0	48@2500	C	Long	Borg	Spic	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	566	140	3980	20x6.00	32x6
*Federal E 6 S W	2½-3	1150	Con	L	6	3⅜x4	215.0	27.3	60@2600	C	Long	Borg	Spic	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	566	145	4030	20x6.00	32x6
Federal T 10 B	2½-3	2740	Con	H	6	4 x4⅛	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	Sp	44.5	L4IHV	659	165	6645	34x7	34x7D
Federal T 10 W	2½-3	2915	Con	H	6	4 x4⅛	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	Wo	44.0	L4IHV	659	165	6645	34x7	34x7D
Federal T 10 D R	2½-3	2915	Con	H	6	4 x4⅛	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	2 R	45.6	L4IHV	659	165	6645	34x7	34x7D
Federal U 6	3-3½	3860	Con	H	6	4 x4⅛	339.0	38.4	85@2200	C	Long	Borg	Pet	Ross	Str	P	DR	Br-L	7	Tim	Wo	64.6	L4IHV	676	165	7315	34x7	34x7D
Federal U 6 D R	3-3½	3860	Con	H	6	4 x4⅛	339.0	38.4	85@2200	C	Long	Borg	Pet	Ross	Str	P	DR	Br-L	7	Tim	2 R	69.6	L4IHV	767	165	7315	34x7	34x7D
Federal 4 C 6 A	4-5	4735	Con	H	6	4⅛x4¾	381.0	40.8	90@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Br-L	7	Tim	Wo	72.2	L4IHV	894	192	8460	36x8	36x8D
Federal 4 C 6 A D R	4-5	4735	Con	H	6	4⅛x4¾	381.0	40.8	90@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Br-L	7	Tim	2 R	80.6	L4IHV	894	192	8460	36x8	36x8D
Federal 4 C 6 A B	4-5	4960	Con	H	6	4⅛x4¾	381.0	40.8	90@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Br-L	7	Tim	Wo	72.2	T4IA	921	192	8980	36x8	36x8D
Federal 4 C 6 A B D R	4-5	4960	Con	H	6	4⅛x4¾	381.0	45.9	90@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Br-L	7	Tim	2 R	80.6	T4IA	421	192	8980	36x8	36x8D
*Federal U 6 S W	6	6000	Con	H	6	4⅛x4¾	380.9	40.8	90@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Br-L	7	Tim	Wo	71.3	L6IHV	1093	201	10395	34x7	34x7D
*Federal U 6 S W A B	6	6500	Con	H	6	4⅛x4¾	380.9	40.8	90@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Br-L

Major Specifications and Mechanical Details of 1931 Commercial Cars

(CONTINUED FROM PAGE FIVE)

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H. P.	Max. Brake H. P. and Peak R. P. M.	Type Camshaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electr'l System	Make Transmission	No. Spds. For.	Rear Axle Make	Type Final Drive	Final Gear Reduction	Type Service Brakes	Area Service Brakes	Standard Wheel Base	Chassis Wgt.	Standard Tire Sizes Front	Rear
General Motors T 42	*15000	1845	Buick	H	6	3½x4½	257.5	28.3	76@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Own	4	Own	Sp	33.4	B4IM	524	141	4725	32x6P	32x6DP
General Motors T-44	*16000	1935	Buick	H	6	3½x4½	257.5	28.3	76@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Own	4	Own	2R	40.9	B4IM	524	141	4005	32x6P	32x6DP
General Motors T-45	*16000	1990	Own	H	6	3½x4½	257.5	28.3	76@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Own	4	Own	2R	50.7	B4IM	524	141	5050	32x6P	32x6DP
General Motors T-51	*19000	2565	Own	H	6	3¾x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Own	4	Own	Sp	40.6	B4IM	574	155	5955	34x7P	34x7DP
General Motors T-53	*19000	2690	Own	H	6	3¾x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Own	4	Own	2R	49.8	B4IM	574	155	6095	34x7P	34x7DP
General Motors T-55	*19000	2690	Own	H	6	3¾x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Own	4	Own	Wo	52.5	B4IM	685	154	6925	34x7P	34x7DP
General Motors T-60	*22000	3035	Buick	H	6	3¾x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Str	P	DR	Own	4	Own	Wo	52.5	B4IMV	685	154	6965	20x9.00B	20x9.00DB
General Motors T-61	*22000	3445	Own	H	6	3¾x5	331.4	33.7	94@2500	G	Long	Own	Pet	Sag	Str	P	DR	Own	12	Own	Wo	142.5	B4IM	793	155	7500	20x9.00B	20x9.00DB
General Motors T-82	*24000	3795	Own	H	6	3¾x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Str	P	DR	Own	12	Own	Wo	142.5	B4IMV	865	155	7670	20x9.00B	20x9.00DB
General Motors T-83	*24000	3990	Own	H	6	3¾x5	331.4	33.7	1156@3200	C	Long	Own	Spic	Sag	Str	P	DR	Own	4	Own	2R	53.3	B4IMV	865	171	10630	20x9.75B	20x9.75DB
General Motors T-85	*26000	5600	Own	H	6	4¼x5½	468.0	43.3	94@2500	G	Long	Own	Pet	Sag	Str	P	DR	Own	12	Own	Wo	129.0	BrIA	868	185	9400	20x7.50B	20x7.50DB
†General Motors T-90	*28000	5285	Own	H	6	3¾x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Str	P	DR	Own	4	Own	Wo	53.3	B6IA	1191	189	13250	34x7P	34x7DP
†General Motors T-95	*34000	7545	Own	H	6	4¼x5½	468.0	43.3	115@2200	C	Long	Own	Spic	Sag	Str	P	DR	Own	4	Own	2R	51.1	B6IA	1191	189	12850	34x7P	34x7DP
†General Motors T-96	*34000	7195	Own	H	6	4¼x5½	463.0	43.3	115@2200	C	Long	Own	Spic	Sag	Str	P	DR	Own	4	Own	Wo	53.3	B6IA	1191	189	12850	34x7P	34x7DP
Gramm A X 4	1	795	Con	L	4	3⅜x4	200.4	24.0	50@2800	C	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	36.3	L4IH	380	131	*3300	20x6.00	20x6.50
Gramm A X 6	1	895	Con	L	6	3⅜x4	214.6	27.3	61@3600	C	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	36.3	L4IH	380	131	3550	20x6.00	20x6.50
Gramm B X 4	1½	895	Con	L	6	3⅜x4	214.7	27.3	61@3000	C	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	36.3	L4IH	380	131	3475	20x6.00	20x6.00D
Gramm B X 6	1½	995	Con	L	6	3¼x4½	224.0	25.3	61@2900	G	Per	Own	Blo	Ross	Zen	Vac	Aut	Cov	4	Tim	Sp	34.3	L4IH	380	131	3725	20x6.00	20x6.00D
Gramm B	1¾	1495	Lyc	L	6	3¼x4½	224.0	25.3	61@2900	G	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	37.0	L4IH	452	131	3900	20x6.50	20x6 50D
†Gramm C X 4	2	1095	Con	L	4	4½x4¼	227.0	27.2	55@2600	G	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	37.0	L4IH	452	131	4150	20x6.50	20x6.50D
†Gramm C X 4	2	1096	Knight	S	6	2⅛x4⅜	177.9	20.7	53@2600	C	Own	Borg	Blo	Ross	Til	Vac	Aut	Cov	4	Eat	Sp	—	——	—	151	——	30x5	32x6
Gramm 16	2	1096	Knight	S	6	2⅛x4⅜	248.2	27.3	70@3000	C	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	37.0	L4IH	452	131	4150	20x6.50	20x6.50D
Gramm C X 6	2	1295	Con	L	6	3⅜x4⅜	248.2	27.3	70@2600	C	Own	Jon	Ble	Ross	Til	Vac	Aut	Cov	4	—	—	—	——	—	164	——	32x6	34x7
Gramm 21	2½	1295	Knight	S	6	3⅜x4⅜	255.	27.3	70@2600	C	Per	Own	Blo	Ross	Zen	P	Aut	Cov	4	Tim	Sp	31.0	L4IH	353	160	4800	20x7.00	20x7 00D
Gramm C	2	1795	Lyc	L	6	3⅜x4½	278.6	31.5	82@2600	G	Per	Jon	Blo	Ross	Zen	P	Aut	Cov	4	Tim	Sp	33.0	L4IHV	339	160	5200	20x7.50	20x7.50D
Gramm D	2½	1995	Lyc	L	6	3¾x4½	299.0	33.7	90@2200	G	Own	Jon	Blo	Ross	Zen	Vac	Aut	Cov	4	Wis	2R	—	——	—	190	——	20x7.50	20x7.50D
Gramm 75	3	2295	Knight	S	6	3⅜x4⅜	255.	27.3	70@2600	C	Per	Own	Blo	Ross	Zen	P	Aut	Cov	4	Tim	Sp	35.0	L4IHV	659	160	5950	20x8.25	20x8 25D
Gramm E	3	2595	Lyc	L	6	3⅞x5	353.8	36.0	90@2200	G	Per	Ful	Blo	Ross	Zen	P	Aut	Cov	4	Tim	Sp	30.0	L4IHA	—	190	7200	20x7.50	20x7.50D
Gramm E Y	3	3595	Con	H	6	4½x4¾	380.8	40.8	90@2200	C	Per	Ful	Blo	Ross	Zen	P	Aut	Cov	4	Wis	2 R	28 0	BW4IM	—	210	7700	20x8.25	20x9.00D
Gramm G Y	4	4345	Con	H	6	4⅝x4¾	428.4	45.9	100@2200	C	Per	Ful	Blo	Ross	Zen	P	Aut	Cov	4	Wis	2 R	—	4IA	864	157	9500	20x9.00	36x8D
Gramm G W	4	5175	Con	H	6	4⅝x4¾	428.0	45.9	100@2200	C	Per	Ful	Blo	Ross	Zen	P	Aut	Ful	4	Wis	2 R	25.2	4IA	—	236	10100	36x8	36x8D
Gramm H Y	5	6545	Con	L	6	4⅝x5¾	611.4	54.1	127@2300	G	Per	Ful	Blo	Ross	Zen	P	Aut	Ful	4	Wis	2 R	25.2	4IA	—	236	10100	36x8	36x8D
Indiana 60	*6000	995	Con	L	6	3⅜x4	214.7	27.3	61@3000	C	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	3	Col	Sp	19.8	B4IM	297	132	*3200	30x5	30x5
Indiana 64	6500	1195	Con	L	6	3⅜x4⅝	248.2	27.3	65@2700	C	Long	Borg	Spic	Ross	Str	Vac	Aut	Br-L	3	Col	Sp	21.3	C4IM	244	137	3400	30x5	30x5
Indiana 74	7500	1290	Con	L	6	3⅜x4⅝	248.2	27.3	65@2700	C	Long	Borg	Spic	Ross	Str	Vac	Aut	Br-L	4	Col	Sp	25.6	C1IM	190	137	3450	32x6	32x6
Indiana 89	9000	1525	Con	L	6	3⅜x4⅝	248.2	27.3	65@2700	C	McC	Borg	Spic	Ross	Str	Vac	Aut	Br-L	4	Wis	2 R	35.2	K2IM	770	120	3740	32x6	32x6D
Indiana 111 XW	12500	1850	Her	L	4	4 x5	251.3	25.6	46@2000	G	G & O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Sp	31.3	L4IH	353	156	5200	32x6	32x6D
Indiana 120	12000	1990	Con	H	6	4 x4½	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2 R	35.3	54IHV	356	156	6500	32x6	32x6D
Indiana 130	14000	2495	Con	H	6	4 x4½	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2 R	46.2	L4IHV	380	170	6200	32x6	32x6D
Indiana 140	17000	2935	Con	H	6	4 x4½	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2 R	46.6	L4IHV	380	170	6800	32x6	34x7D
Indiana 141	17000	3160	Con	H	6	4½x4¾	380.9	40.8	89@2400	C	G & O	——	Spic	Ross	Str	P	Aut	——	5	Wis	2 R	45.3	L4IHV	380	170	7200	34x7	34x7D
Indiana 170	17500	3660	Con	H	6	4⅝x4¾	427.5	45.9	100@2400	C	G & O	——	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2 R	49.5	L4IHV	471	170	7500	34x7	34x7D
Indiana 175	17500	3660	Con	H	6	4½x4¾	380.9	40.8	89@2400	C	G & O	Br-I	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2 R	49.5	L4IHV	500	168½	7625	34x7	34x7D
Indiana 195	19500	3820	Con	H	6	4½x4¾	380.9	40.8	89@2400	C	Long	Borg	Spic	Ross	Str	P	Aut	Br-L	7	Tim	Wo	78.6	T2IMV	546	170	8200	36x8	36x8D
Indiana 190	20000	4185	Con	H	6	4⅝x4¾	427.5	45.9	100@2400	C	G & O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2 R	50.7	L4IHV	664	182	10000	40x8	40x8D
Indiana 220	22000	4560	Con	H	6	4⅝x4¾	427.5	45.9	100@2400	C	Long	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Wo	63.7	LT4IHV	676	182	10750	38x7P	40x14S
Indiana 250	25000	5950	Con	H	6	4⅝x4¾	427.5	45.9	100@2400	C	Long	Br-L	Spic	Ross	Str	P	L-N	Br-L	7	Tim	Wo	95.0	T4IA	864	212	14000	38x7P	36x10S
Indiana 290	30000	7250	Con	L	6	4¾x5¾	611.4	54.1	116@1800	C	Long	Br-I	Spic	Ross	Str	P	L-N	Br-L	7	Tim	Wo	99.9	T4IA	864	212	14000	38x7P	
*Indiana 640	40000	9700	Con	L	6	4¾x5¾	611.4	54.1	116@1800	C																		
International A 2	1½	675	Wak	L	4	3⅝x4½	186.0	21.0	39@2400	G	Mod	Mec	Mec	Ross	Zen	Vac	DR	W-G	4	Own	Sp	39.5	BE4IM	212	136	*2935	5.50x20	6.00x20
International B 2	1½	725	Wak	L	4	3⅝x4½	186.0	21.0	39@2400	G	Mod	Mec	Mec	Ross	Zen	Vac	DR	W-G	4	Own	Sp	47.3	BE4IM	212	136	2980	5.50x20	6.00x20
International A L 2	1½	1450	Lyc	L	6	3¼x4½	224.0	25.3	52@2700	G	Mod	Own	Mec	Ross	Zen	Vac	DR	Own	4	Own	Sp	42.9	B4IM	295	138	4032	20x6.00	20x6.00D
International A 4	2	1860	Own	H	6	3⅝x4½	279.0	31.5	67@2600	G	Mod	Own	Mec	Ross	Zen	Vac	DR	Own	5	Own	Sp	47.8	BE4IM	378	145	5221	32x6	32x6D
International A 5	3	2550	Own	H	6	3⅝x4½	279.0	31.5	67@2600	G	Mod	Own	Mec	Ross	Zen	Vac	DR	Own	5	Own	Sp	52.6	BE4IM	430	156	5895	34x7	34x7D
International A 6	3	2675	Own	H	6	3⅝x4½	279.0	31.5	67@2600	G	Mod	Own	Mec	Ross	Zen	Vac	DR	Own	5	Own	Sp	52.6	BE4IM	430	156	6120	34x7	34x7D
International W 1	2½	3850	Hall	H	4	4¼x5½	312.0	28.9	59@2000	C	Own	Own	Own	Own	Zen	Vac	RB	Own	5	Own	2 R	60.5	BE4IM	710	148	8300	36x5S	36x8S
International W 2	3½	4850	Hall	H	4	4¾x5½	390.0	36.1	69@2000	C	Own	Own	Own	Own	Zen	Vac	RB	Own	5	Own	2 R	70.5	BE4IM	794	160	10125	36x6S	40x12S
La France Rep. A 1	6000	795	Lyc	L	6	3 x4¾	201.5	21.5	60@2500	G	G & O	Borg	Spic	Han	Zen	Vac	Aut	Ful	4	Tim	Sp	36.1	L4IH	378	132	3000	20x5.50	32x6
La France Rep. C 1	7500	1295	Lyc	L	6	3¼x4½	224.0	25.4	61@2750	G	G & O	Eorg	Spic	Han	Zen	Vac	Aut	Ful	4	Tim	Sp	29.1	L4IH	413	144	3300	20x6.00	32x6
La France Rep. D 1	9000	1595	Lyc	L	6	3¼x4½	224.0	25.4	61@2750	G	G & O	Borg	Spic	Han	Zen	P	Aut	Ful	4	Tim	Sp	37.9	L4IH	448	144	3725	30x5	30x5D
La France Rep. F-3	13000	2395	Lyc	L	6	3¼x4½	299.0	33.7	80@2500	G	Per	Ful	Spic	Han	Zen	P	Aut	Ful	4	Tim	Sp	40.1	L4IHV	628	174	5520	34x7	34x7
La France Rep. H 2	16000	2985	Lyc	L	6	3⅞x5	354.0	36.0	85@2100	G	Per	Ful	Spic	Han	Zen	P	Aut	Ful	4	Wis	2 R	41.6	L4IHV	658	174	6370	34x7	34x7D
La France Rep. M 2	20000	4000	Wak	L	6	4⅝x5½	462.0	46.0	97@2000	G	Per	Ful	Spic	Han	Zen	P	Aut	Ful	5	Wis	2 R	48.1	L4IHV	766	174	7500	36x8	36x8D
La France Rep 35-2	24000	5600	Wak	L	6	4½x5¾	549.0	48.6	98@1850	G	Own	Ful	Spic	Han	Zen	P	Aut	Ful	4	Wis	2 R	45.4	L4IHV	870	174	9250	38x9	38x9D
Macear 36 A	1½	1900	Bud	L	6	3¾x4½	208.0	33.7	83@2800	G	Per	Br-L	Spic	Ross	Str	P	DR	Br-L	4	Tim	Sp	30.6	L4IH	315	171	4850	32x6	32x6D
Macear 40 A	2	2400	Bud	L	6	3¾x4½	208.0	33.7	83@2800	G	Per	Br-L	Spic	Ross	Str	P	DR	Br-L	4	Tim	Sp	32.8	L4IHV	325	171	5340	32x6	34.7D
Macear 56	3	3350	Bud	L	6	3¾x5	311.0	33.7	72&2100	G	Per	Br-L	Spic	Ross	Str	Vac	DR	Br-L	4	Wis	2 R	37.4	L4IHV	411	183	6200	34x7	20x9.00D
Macear 60	3	3950	Bud	L	6	4½x5½	411.0	40.8	103@2100	G	Per	Br-L	Spic	Ross	Str	Vac	DR	Br-L	4	Tim	Wo	34.3	L4IHV	411	183	6600	20x9.00	20x9 75D
Macear 66 A	4	5500	Her	L	6	4⅝x4¾	479.0	51.3	106@2100	G	Per	Br-L	Spic	Ross	Zen	Vac	DR	Br-L	7	Tim	Wo	64.5	W4IA	617.5	206	8200	20x9.75	20x10.50D
Macear 86 A	5	5950	Her	L	6	4⅝x4¾	479.0	51.3	106@2100	G	Per	Br-L	Spic	Ross	Zen	Vac	DR	Br-L	7	Tim	Wo	72.3	W4IA	623	206	9500	20x10.50	20x9.75D
†Macear SW-86	10	7650	Her	L	6	4⅝x4¾	479.0	51.3	106@2100	G	Per	Br-L	Spic	Ross	Zen	Vac	DR	Br-L	7	Tim	Wo	72.3	T6IA	103	206	11700	20x9.75	20x9.75D
††Mack B L	——	2500	Own	L	6	3¼x5	248.9	25.3	63@2800	G	Own	Own	Spic	Gem	Str	Vac	NE	Own	4	Tim	Sp	Opt	L4IH	302	148	*4450	20x6.00B	20x6.00DB
††Mack B G	——	3000	Own	L	6	3⅝x5	309.6	31.5	75@2600	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Own	Sp	Opt	O4IV	415	156	5200	32x6	32x6D
††Mack A B	——	4350	Own	L	4	4¼x5	283.7	28.9	60@2200	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	2 R	Opt	O4IV	471	146½	7100	34x7	34x7D
Mack A B	——	4000	Own	L	4	4¼x5	283.7	28.9	60@2200	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Own	Ch	Opt	O4IV	471	146½	6850	34x7	34x7D
Mack A B	——	4500	Own	L	6	3⅝x5	309.6	31.5	75@2600	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	2 R	Opt	O4IV	471	146½	7050	34x7	34x7D
††Mack A B	——	4150	Own	L	6	3⅝x5	309.6	31.5	75@2600	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Own	Ch	Opt	O4IV	471	154	8350	36x8	36x8D
††Mack B C	——	5250	Own	L	6	4 x5½	417.7	38.4	100@2300	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Own	2 R	Opt	O4IV	567	168½	10100	36x8	36x8D
††Mack B C	——	5500	Own	L	6	4 x5½	417.7	38.4	100@2300	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Own	Ch	Opt	O4IV	567	154	8500	36x8	36x8D
††Mack B J	——	6150	Own	L	6	4½x5½	525.2	48.6	126@2200	G	Own	Own	Spic	Own	Str	Vac	L-N	Own	4	Own	2 R	Opt	O4IV	567	168½	10100	36x8	36x10S
††Mack A K	——	5150	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	O4IV	492	162	9000	36x5S	36x5DS
††Mack A K	——	5250	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	2 R	Opt	O4IV	492	162	9700	36x5S	40x5DS
††Mack A C	——	4950	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	OJXM	194	156	9500	36x5S	22x10.50DS
††Mack A K	——	6450	Own	L	6	4½x5½	525.5	48.6	126@2200	G	Own	Own	Spic	Own	Str	Vac	L-N	Own	4	Own	2 R	Opt	O4IV	492	174	10950	36x6S	40x6DS
††Mack A C	——	5500	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	OJXM	194	156	10100	24x10.50B	24x10.50DB
††Mack A C	——	6550	Own	L	6	4½x5½	525.5	48.6	126@2200	G	Own	Own	Spic	Own	Str	Vac	L-N	Own	4	Own	Ch	Opt	O4IV	492	174	11950	24x10.50B	24x10.50DB
††Mack A C	——	6000	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	OJXM	194	156	10450	36x7S	40x7DS
††Mack A P	——	9500	Own	L	6	5 x6	706.5	60.0	150@2000	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	02IV	287	191	12200	36x7S	40x8DS
††Mack A K 6—6 wheel	——	9500	Own	L	6	4½x5½	525.2	48.6	126@2200	G	Own	Own	Spic	Own	Str	Vac	L-N	Own	4	Own	2 R	Opt	ONIA	574	152-52	16300	9.75x22B	9.75x22DB
††Mack A C 6 wheel	——	7650	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	ORIV	574	125-52	13800	36x6S	40x12S
††Mack A C 6—6 wheel	——	9000	Own	L	6	4½x5½	525.2	48.6	126@2200	G	Own	Own	Spic	Own	Str	Vac	L-N	Own	4	Own	Ch	Opt	O6IA	574	145-52	14950	40x8	40x8D
Mack A P 6 wheel	11500	Own	L	6	5 x6	706.5	60.0	150@2000	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	O6IA	574	145-52	15250	40x8	40x8D
††Mack A P 6 wheel	12000	Own	L	6	5 x6	706.5	60.0	150@2000	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	2 R	Opt	O6IA	574	145-52	——	22x9.75B	22x9.75B
Paige	½	*895	Own	L	6	3⅛x4½	207.0	23.4	66@3200	C	Long	Long	Un	Ross	DL	I	DR	—	3	——	Sp	14.2	4HI	264	115	2350	18x5.50B	18x5.50B
Pierce-Arrow P T	12000	2950	Own	L	6	3¾x4½	298.0	33.5	70@2600	G	Long	Long	Cle	Han	Zen	P	DR	Cla	4	Tim	Sp	——	B4IMV	388	160	*5600	20x7.50B	20x7.50B
Pierce-Arrow P W	18000	4150	Own	L	6	4½x4½	361.0	40.3	77@2400	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	*Wo	——	W4IA	488	150	6660	20x9.00B	20x9.00B
Pierce-Arrow P X	24000	5375	Own	L	6	4⅝x4¾	479.0	51.3	103@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Own	*Wo	——	W4IA	610	160	9300	20x10.50B	24x10.50B
Pierce-Arrow P Y	28000	5950	Own	L	6	4⅝x4¾	479.0	51.3	103@2200	G	Long	Long	Cle	Han	Zen	P	DR	Own	4	Own	*Wo	——	W4IA	702	168	12800	24x10.50B	40x16B
Pierce-Arrow P Z	34000	6950	Own	L	6	4¾x5¾	611.0	54.1	130@2000	C	Long	Long	Cle	Han	Zen	P	DR	Own	4	Own	*Wo	——	W4IA	702	168	12800	36x7B	36x7B
Relay Series 15 AA	¾	1370	Con	L	6	3⅜x4	214.7	27.3	62@2200	C	Long	Borg	Blo	Han	Str	Vac	Aut	W-G	4	Own	2R	38.4	L4IH	297	131	3750	30x5P	30x5P
Relay Series 15 AB	1	1400	Con	L	6	3⅜x4	214.7	27.3	53@2200	G	Long	Borg	Blo	Han	Zen	Vac	Aut	W-G	4	Own	2R	38.4	L4IH	297	131	3800	30x5P	30x5P
Relay Series S 11	1	1700	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Own	2R	25.5	L4IH	297	142	4050	30x5P	30x5DP
Relay Series S 11	1½	1900	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Own	2R	30.0	L4IH	297	162	4500	30x5P	34x5DP
Relay Series 40	1½	2990	Bud	L	6	3⅝x5	309.6	31.5	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Own	2R	34.5	L4IH	394	168	5300	34x5P	36x6D
Relay Series 40	2	3240	Bud	L	6	3⅝x5	309.6	31.5	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Own	2R	34.5	L4IH	394	168	5500	36x6	36x6D
Relay Series 50	2	3860	Bud	L	6	3¾x5	331.0	33.7	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	5	Own	2R	58.5	L4IH	584	161	6800	36x6	36x6D
Relay Series S 11	2	2030	Bud	L	6	3¾x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Own	2R	34.5	L4IH	394	168	4700	32x6P	32x6DP
Relay Series 40	2½	3275	Bud	L	6	3⅝x5	309.6	31.5	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Own	2R	30 0	L4IH	297	162	5700	36x6	36x6D
Relay Series 50	2½	4000	Bud	L	6	3¾x5	331.0	33.7	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	5	Own	2R	34.5	L4IH	394	168	5700	36x6	34x7D
Relay Series 60	2½	4555	Bud	L	6	4⅛x5⅛	410.9	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Own	2R	58.5	L4IH	584	161	7000	36x6	36x6D
Relay Series 50	3	4130	Bud	L	6	3¾x5	330.0	33.7	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	5	Own	2R	58.5	L4IH	584	175	7350	36x6	36x6
Relay Series 60	3	4595	Bud	L	6	4½x5½	410.9	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Own	2R	58.5	L4IH	584	161	7200	36x6	40x8D
Relay Series 60	3	5170	Bud	L	6	4½x5½	411.0	40.8	83@2100	G	Long	Borg	Blo	Ross	Zen	Vac	Aut	Cov	8	Own	2R	84.1	——	—	175	8400	36x6	38x7D
Relay Series 80	3	4745	Bud	L	6	4½x5½	410.9	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Own	2R	58.5	L4IH	584	175	7800	38x7	40x10S
Relay Series 60	3½	5330	B

Major Specifications and Mechanical Details of 1931 Commercial Cars

(CONTINUED FROM PAGE SIX)

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H. P.	Max. Brake H. P. and Peak R. P. M.	Type Camshaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electrl System	Transmission Make	No. Spds. For.	Rear Axle Make	Type Final Drive	Final Gear Reduction	Type Service Brakes	Area Service Brakes	Standard Wheel Base	Chassis Wgt.	Standard Tire Sizes Front	Rear
Selden 67 C	5	4875	Con	H	6	4⅜x4¾	427.0	45.9	100@2400	C	Own	Br-L	Spic	Ross	Str	Vac	Aut	Br-L	7	Wis	2R	——	L4IHVA	—	171	8700	36x8	36x8D
Selden 77	7	7365	Con	L	6	4⅝x5¾	611.0	64.1	127@3300	G	Own	Br-L	Spic	Ross	Str	Vac	Aut	Br-L	7	Wis	2R	——	BW4IM	—	178	11600	40x8	42x8D
Service Series S 11	1	1600	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Col	Sp	25.5	——	—	142	3900	30x5P	30x5P
Service Series S 11	1½	1900	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Sp	29.2	L4IH	297	162	4300	30x5P	30x5DP
Service Series 40	1½	2990	Bud	L	6	3⅝x5	309.6	31.5	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Wo	34.8	L4IH	394	168	4700	34x5P	34x5DP
Scrvice Series S 11	2	2030	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Sp	29.2	L4IH	297	162	4500	32x6	32x6D
Service Series 40	2	3240	Bud	L	6	3⅝x5	309.6	31.5	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Wo	34.8	L4IH	394	168	4900	36x6	36x6D
Service Series 40	2½	3240	Bud	L	6	3⅝x5	309.6	31.5	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Wo	34.8	L4IH	394	168	5100	36x6P	36x6D
Service Series 60	2½	4580	Bud	L	6	4¼x5½	416.6	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Tim	Wo	63.0	L4IH	564	175	7000	36x6	36x6D
Service Series 60	3	4680	Bud	L	6	4¼x5½	416.9	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Tim	Wo	63.0	——	—	175	7100	36x6	38x7D
Service Series 80	3½	5250	Bud	L	6	4¼x5½	411.0	40.8	83@2100	G	Long	Borg	Blo	Russ	Zen	Vac	Aut	Br-L	7	Tim	Wo	98.2	——	—	175	8200	36x6S	38x12S
Service Series 80	4	5330	Bud	L	6	4¼x5½	411.0	40.8	83@2100	G	Long	Own	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	98.2	——	—	175	8400	36x6S	36x14S
Service Series 100	5	5830	Bud	L	6	4¼x5½	410.9	40.8	83@2100	G	Long	Own	Blo	Russ	Zen	Vac	Aut	Br-L	7	Tim	Wo	95.0	——	—	175	9600	36x6S	40x14S
Stewart 30	1	695	Lyc	L	4	3¾x4½	199.0	22.5	50@2600	G	Fed	Borg	Spic	Ross	Str	P	DR	W-G	4	Sal	Sp	35.1	B4IM	..	130	*3158	20x6.50	20x6.50
Stewart 30X	1	795	Lyc	L	6	3 x4¾	185.0	23.8	60@2800	G	Fed	Borg	Spic	Ross	Str	P	DR	W-G	4	Sal	Sp	35.1	B4IM	..	130	3199	20x6.50	20x6.50
Stewart 40	1½	895	Lyc	L	4	3¾x4½	199.0	22.5	50@2600	G	Fed	Borg	Spic	Ross	Str	P	DR	W-G	4	Cla	Sp	35.1	B4IM	..	130	3531	20x6.50	20x6.50D
Stewart 40 X	1½	995	Lyc	L	6	3 x4½	201.5	23.8	60@2800	G	Fed	Borg	Spic	Ross	Str	P	DR	W-G	4	Sal	Sp	35.1	B4IM	..	130	3574	20x6.50	20x6.50D
Stewart 34 X	1½	1195	Lyc	L	6	3¼x4½	224.0	25.3	61@2600	G	Own	Borg	Spic	Ross	Str	P	DR	W-G	4	Cla	Sp	35.1	B4IM	..	145	3891	20x6.50	20x6.50D
Stewart 28 X	2	1495	Lyc	L	6	3¼x4½	224.0	25.3	61@2600	G	Own	Ful	Spic	Ross	Str	P	DR	Ful	4	Cla	Sp	44.1	B4IM	..	136	4239	20x6.50	20x6.50D
Stewart 29 X S	2	1695	Lyc	L	6	3⅝x4½	278.0	25.3	85@2750	G	Own	Ful	Spic	Ross	Str	P	DR	Ful	4	Cla	Sp	44.1	B4IM	..	145	5194	32x6	32x6D
*Stewart 18 X	2½	2690	Lyc	L	6	3⅝x5	310.0	31.5	85@2750	G	Own	Ful	Spic	Ross	Str	P	DR	Ful	4	Tim	Wo	46.1	B4IM	..	165	6745	32x6	32x6D
Stewart 32 X	2½	1990	Lyc	L	6	3⅝x4½	276.0	31.5	80@2600	G	Mod	Ful	Spic	Ross	Str	P	DR	Ful	4	Cla	Sp	46.1	B4IM	..	165	5552	32x6	32x6D
Stewart 35 X	3	2590	Lyc	L	6	3⅝x4½	299.0	33.8	85@2750	G	Fed	Ful	Spic	Ross	Str	P	DR	Ful	4	Cla	Sp	46.1	B4IM	..	165	6224	20x8.25B	20x8.25D
Stewart 36 X	3	2990	Lyc	L	6	3⅝x5	354.0	38.2	90@2750	G	Fed	Borg	Spic	Ross	Str	P	DR	Br-L	4	Tim	Wo	105.1	B4IM	..	165	6804	20x8.25	20x8.25D
Stewart 19 X	3½	3690	Lyc	L	8	3⅛x5	354.0	38.2	90@2750	G	Mod	Ful	Spic	Ross	Str	P	DR	Ful	12	Tim	Wo	105.1	B4IM	..	165	7474	34x7	34.7D
Stewart 38-8	2½	3990	Lyc	L	8	3¾x4¾	462.0	44.4	130@2800	G	Fed	Borg	Spic	Ross	Str	P	DR	Br-L	12	Tim	2R	105.1	B4IMV	..	170	7964	20x9.00	20x9.00D
Stewart 38-6	3½	3990	Wak	L	6	4⅜x5½	420.0	45.9	100@2000	G	Fed	Borg	Spic	Ross	Str	P	DR	Br-L	12	Tim	2R	105.1	B4IMV	..	170	7964	20x9.00	20x9.00D
Stewart 31 X	5	4990	Wak	L	6	4⅜x5½	462.0	45.9	100@2000	G	Mod	Ful	Spic	Ross	Str	P	DR	Ful	8	Tim	Wo	105.1	B4IMV	—	165	6885	36x6S	36x6SD
Stewart 27 X	7	5700	Wak	L	6	4⅜x5½	462.0	45.9	100@2000	G	Own	Ful	Spic	Ross	Str	P	DR	Ful	8	Tim	Wo	105.1	B4IMV	—	165	6512	36x7	40x7D
Studebaker S-1	½	595	Own	L	6	3⅜x4½	221.0	27.3	70@3200	C	McC	Long	Spic	Ross	Str	P	DR	W-G	3	Own	Sp	16.4	B4IM	148	114	*2897	19x5.25	19x5.25
Studebaker S-20	1½	695	Own	L	6	3¼x4½	205.0	25.4	70@3200	C	McC	Long	Spic	Ross	Str	P	DR	W-G	4	Tim	Sp	36.2	B4IM	224	130	3044	20x6.00	32x6
Studebaker S-30	1½	775	Own	L	6	3¼x4½	205.0	25.4	70@3200	C	McC	Long	Spic	Ross	Str	P	DR	W-G	4	Tim	Sp	36.2	B4IM	224	160	3199	20x6.00	32x6
Studebaker S-40	2	895	Own	L	6	3¼x4½	205.0	25.4	70@3200	C	McC	Long	Cle	Ross	Str	P	DR	W-G	4	Tim	Sp	37.4	B4IM	276	136	3825	20x6.50	20x6.50D
Studebaker S-50	2	920	Own	L	6	3¼x4½	205.0	25.4	70@3200	C	McC	Long	Cle	Ross	Str	P	DR	W-G	4	Tim	Sp	37.4	B4IM	276	148	3855	20x6.50	20x6.50D
Studebaker S-60	2	945	Own	L	6	3¼x4½	205.0	25.4	70@3200	C	McC	Long	Cle	Ross	Str	P	DR	W-G	4	Tim	Sp	37.4	B4IM	276	160	3909	20x6.50	20x6.50D
Studebaker 88	——	3295	Own	L	8	3⅛x4⅜	337.0	39.2	115@3200	G	Long	Long	Spic	Ross	Str	P	DR	Ful	4	Eat	Sp	24.6	B4IMV	444	184	5413	20x7.50	20x7.50D
Studebaker 99	——	3795	Own	L	8	3⅛x4⅜	337.0	39.2	115@3200	G	Long	Long	Spic	Ross	Str	P	DR	Ful	4	Eat	Sp	24.6	B4IMV	505	184	5680	20x7.50	20x7.50D
White 15B	*7,500	1545	Own	L	4	3¾x5⅛	226.4	22.5	31@1600	G	Own	Own	Spic	Own	Zen	Vac	L-N	Own	4	Own	Sp	18.6	O2XM	226	133½	3402	30x5	30x5
White 160	*8,000	1700	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	—	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	4625	30x5	30x5
White 60	*8,000	1850	Own	L	6	3½x4½	260.0	29.4	54@2100	C	Own	Own	Mec	Han	Zen	Vac	DR	Own	3	Own	Sp	17.8	L4IH	276	138	3739	30x5	30x5D
White 160	*9,000	1850	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	—	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	4290	34x7	34x7
White 162	*10,000	1900	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	—	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	4260	30x5	30x5D
White 210	*10,000	2300	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	—	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	22.4	L4IH	349	148	4875	30x5	30x5D
White 61	*10,500	2455	Own	L	6	3¾x4½	299.0	33.7	71@2100	C	Own	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	148	4789	30x5	30x5D
White 611	*11,500	2550	Own	L	6	3¾x4½	299.0	33.7	61@2100	C	—	—	Own	—	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	148	4980	20x7.00B	20x7.00DB
White 211	*11,500	2425	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	—	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	148	5110	32x6	32x6D
White 212	*13,000	2700	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	—	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	148	5230	34x7	34x7D
White 56	*13,000	3125	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	Sp	26.2	O2IM	268	165	5278	36x4	36x7
White 612	*13,000	2800	Own	L	6	3¾x4½	299.0	33.7	61@2100	C	—	—	Own	—	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	148	5100	20x7.50B	20x7.50DB
White 620	*15,000	4350	Own	H	6	4 x5¼	396.0	38.4	72@1800	G	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.8	OL4IHV	—	157	7300	20x8.25B	20x8.25DB
White 51A	*17,000	3750	Own	L	4	4¼x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	Sp	35.6	O2IM	335	170	6438	36x5	36x8
White 51AT	*17,000	3875	Own	L	4	4¼x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	Sp	46.6	O2IM	335	134	6227	36x5	36x8
White 621	*18,000	4650	Own	H	6	4 x5¼	396.0	38.4	72@1800	G	Own	Own	Spic	Russ	Zen	P	DR	Own	4	Own	Sp	41.4	OL4IHV	—	157	7700	20x9.00B	20x9.00DB
White 640	*20,000	6100	Own	H	6	4⅜x5¾	519.0	45.9	96@1800	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	Sp	33.9	O4IA	—	180	9200	20x9.00B	20x9.00DB
White 630	*20,000	5000	Own	H	6	4 x5¼	396.0	38.4	72@1800	G	—	—	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.4	OL4IHV	554	168	8500	20x9.00B	20x9.00DB
White 55	*21,500	4650	Own	L	4	4¼x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	2R	66.1	OPXM	224	174	8737	36x5	40x5D
White 58	*22,000	4400	Own	L	4	4¼x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	2R	49.7	OPXM	224	180	7797	36x5	36x5D
White 641	*24,000	6450	Own	H	6	4⅝x5¾	519.0	45.9	96@1800	G	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	2R	46.9	O4IA	—	180	9700	20.9.75B	20x9.75DB
*White 630 SW200	*24,000	6280	Own	H	6	4 x5¼	396.0	38.4	72@1800	G	—	—	Own	Spic	Ross	P	DR	Own	4	Tim	Wo	44.2	OT1HV	—	193	10000	20x8.25B	20x8.25DB
White 631	*24,000	5750	Own	H	6	4 x5¼	396.0	38.4	72@1800	G	Own	Own	Spic	Russ	Zen	P	DR	Own	4	Own	2R	56.9	O4IHV	—	168	9000	20x9.25B	20x9.25DB
White 52	*28,000	5100	Own	L	4	4¼x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	2R	28.4	OFXM	224	174	9409	36x6	40x12
White 52T	*28,000	4700	Own	L	4	4¼x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	2R	78.5	OPXM	224	129½	8461	36x5	40x5D
White 643	*32,000	6950	Own	H	6	4¾x5¾	519.0	45.9	96@1800	G	Own	Own	Spic	Russ	Zen	P	L-N	Own	4	Own	2R	66.5	O4IA	—	180	10900	24x10.50B	24x10.50DB
*White 642 SW310	*34,000	8045	Own	H	6	4⅜x5¾	519.0	45.9	96@1800	G	—	—	Own	Spic	Ross	Zen	P	L-N	Own	4	Tim	Wo	55.6	OT1HV	—	198	12670	20x9.00B	20.9.00DB
White 642	*34,000	6750	Own	H	6	4⅜x5¾	519.0	45.9	96@1800	G	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	2R	66.5	O4IA	—	180	10600	24x9.75B	24x9.75DB
*White 643 SW410	*40,000	8570	Own	H	6	4⅜x5¾	519.0	45.9	96@1800	G	—	—	Own	Spic	Ross	Zen	P	L-N	Own	4	Tim	Wo	79.9	OT1HV	—	198	14400	40x8	40x8D
**White 60K	——	2200	Own	L	6	3½x4½	260.0	29.4	54@2100	C	—	—	Own	Mec	Han	Zen	Vac	DR	Own	3	Own	Sp	17.6	L4IH	276	112	3200	20x7.00B	20x7.00B
White 601	——	1900	Own	L	6	3½x4½	260.0	29.4	54@2100	C	—	—	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	3825	20x7.00B	20x7.00B
White 602	——	2050	Own	L	6	3½x4½	260.0	29.4	50@1800	C	—	—	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	4125	20x7.50B	20x7.50B
Willys 6-C-113	½	395	Own	L	6	3¼x3⅞	193.0	25.3	65@3400	C	Fed	Borg	Spic	Own	Til	P	Aut	Own	3	Own	Sp	12.4	B4IM	143	113	1923	19x5.00	19x5.00
Willys 6-C-131	1½	595	Own	L	6	3¼x3⅞	193.0	25.3	65@3400	C	Fed	Borg	Spic	Own	Til	P	Aut	W-G	4	Cla	Sp	40.8	B4IM	235	131	2625	20x5.50	22x6
Willys 6-C-157	1½	630	Own	L	6	3¼x3⅞	193.0	25.3	65@3400	C	Wed	Borg	Spic	Own	Til	P	Aut	W-G	4	Cla	Sp	40.8	B4IM	235	157	2900	20x5.50	22x6

GENERAL NOTATIONS

*†**REFERENCE MARKS** apply to individual lines only and explanations are given under the subdivision for each company in the **"SPECIAL NOTATIONS."**

CAPACITIES given in this table are in tons or fractions of tons. *Shows maximum allowable gross weight in pounds.

ENGINE—Bud, Buda; Con, Continental; Her, Hercules; Lyc, Lycoming; Pont, Pontiac; Wak, Waukesha; Wis, Wisconsin; Hall, American Car & Foundry.

VALVE ARRANGEMENT—L, "L" head; H, in head; O, overhead; T, T head; S, sleeve.

TYPE OF CAMSHAFT DRIVE—G, gear; C, chain.

RADIATOR MAKE—G & O, G & O Mfg. Co.; Per, Perfex Corp.; Long, Long Mfg. Co.; Har, Harrison Radiator Corp.; Fed, Fedders Mfg Co.; McC, McCord Radiator & Mfg. Co.; Mod, Modine Mfg. Co.; Hex, Hexcel Radiator Co.

CLUTCH MAKE—Jon, Jones Clutch & Gear Co.; Ful, Fuller & Sons Mfg. Co.; Borg, Borg & Beck Co.; Br-L, Brown Lipe Gear Co.; Rock, Rockford Drill & Machine Co.; Cov, Covert Gear Co.; Long, Long Mfg. Co.; Detr, Detroit Gear & Machine Co.; Mer, Merchant & Evans; Hel, Merchants & Evans.

UNIVERSALS MAKE—Spic, Spicer Mfg. Co.; Blo, Blood Bros. Machine Co.; Sup, Superior Universal Products; Un, Universal Products Co.; Cle, Cleveland Steel Products Corp.; Pet, Peters; Opt, optional; Mec, Mechanics Machine Co.

STEERING GEAR MAKE—Ross, Ross Gear & Tool Co.; Han, Hannum Mfg. Co.; Sag, Saginaw Steering Gear Co.; Gem, Gemmer Mfg. Co.; Col, Columbus Gear & Pump Co.; W-G, Warner Gear Corp.

CARBURETOR—Car, Carter; Mar, Marvel; Sch, Wheeler-Schebler; Str, Stromberg; DL, Detroit Lubricator; Til, Tillotson; Zen, Zenith-Detroit.

FUEL FEED—Gra, gravity; Vac, vacuum tank; P, fuel pump.

ELECTRICAL SYSTEM—AB, American-Bosch; Aut, Electric Auto-Lite; Eis, Eisemann; L-N, Leece-Neville; NE, North East; RB, Robert Bosch; DR, Delco-Remy.

TRANSMISSION—Br-L, Brown-Lipe; Cov, Covert; Ful, Fuller; Mec, Mechanics Machine; Mun, Muncie; W-G, Warner Gear; Cot, Cotta Gear Co.; Cla, Clark Equipment Co.

REAR AXLE, Cla, Clark Equipment; Col, Columbia; Eat, Eaton; Pont, Pontiac; Sal, Salisbury; Tim, Timken; Wis, Wisconsin.

FINAL DRIVE—IG, internal gear; St, straight bevel; Sp, spiral bevel; Wo, worm; 2R, double reduction; Ch, chain; S-T, semi-transverse.

TYPE OF SERVICE BRAKES—B4IM, Bendix, 4 wheel, internal mechanical; B6IA, Bendix, 6 wheel, internal air; B4IMV, Bendix, 4 wheel, internal mechanical, vacuum; BrIA, Bendix, operating on 4 rear wheels, internal air; BW4IM, Bendix front, Wisconsin rear, 4 wheel internal, mechanical; BE4IM, Bendix front, Eaton rear, 4 wheel, internal mechanical; BO4IM, Bendix front, own rear, 4 wheel internal mechanical; B4IH, Bendix, 4 wheel, internal hydraulic; B4, Bendix, 4 wheel.

C4IM, Columbia, 4 wheel, internal, mechanical; K2IM, Clark, 2 wheel, internal, mechanical.

L4IHVA, Lockheed, 4 wheel, internal, hydraulic, vacuum, air; LO4ID, Lockheed, own, 4 wheel, internal, drive shaft; LO4IV, Lockheed, own, 4 wheel, internal, vacuum; LT4DV, Lockheed Timkin, 4 wheel, drive shaft, vacuum; L4IH, Lockheed, 4 wheel, internal, hydraulic; L4IHV, Lockheed, 4 wheel, internal hydraulic, vacuum; LT4IVA, Lockheed, Timken, 4 wheel, internal, vacuum, air; L6IHV, Lockheed, 6 wheel, internal, hydraulic, vacuum; L6IH, Lockheed 6 wheel, internal, hydraulic.

O2IM, Own, 2 wheel, internal, mechanical; O2IV, Own, 2 wheel, internal, vacuum; O4IA, Own, 4 wheel, internal, air; O4IM, Own, 4 wheel, internal, mechanical; O4IV, Own, 4 wheel, internal, vacuum; O4M, Own, 4 wheel, internal, vacuum; O4M, Own, 4 wheel, mechcical; O2XM, Own, 2 wheel, external, mechanical; O4XM, Own, 4 wheel, external, mechanical; OJXM, Own, jack shaft, external, mechanical; OL4IH, Own, Lockheed, 4 wheel, internal, hydraulic; OPX, Own, propeller shaft, external; OPXM, Own, propeller shaft, external, mechanical; OPM, Own, propeller shaft, mechanical; ORIV, Own, rear wheels, internal, vacuum.

S4IM, Steeldraulic, 4 wheel, internal, mechanical.

T4rIA, Timken, operating on 4 rear wheels, internal, air; T4IA, Timken, 4 wheel, internal, air; T6IA, Timken, 6 wheel, internal, air; T2IMV, Timken, 2 wheel, internal, mechanical, vacuum.

W4I, Westinghouse, 4 wheel, internal; W4IA, Westinghouse, 4 wheel, internal, air. W6IA, Westinghouse 6 wheel, internal, air. 4IA, 4 wheel, internal, air; 4IH, 4 wheel, internal, hydraulic; 4M, 4 wheel, mechanical.

WHEEL BASES given are standard, but optional wheel bases are available in many cases.

***CHASSIS WEIGHT** according to Automotive Daily News formula, which is the chassis with gas, oil, water and spare tire, but without cab or other equipment.

TIRES—B, balloon; D, dual; S, solid; P, pneumatic.

SPECIAL NOTATIONS

AMERICAN-LA FRANCE

*Chief model also available as 2½-ton model, 34x7 tire, dual rear; weight, 6,400. Price, $3,900.

Chieftain model also available as dump truck, 160-inch wheel base.

Balloon tires optional on Chief, Chieftain and Big Chief models.

AUTOCAR

*Engines in these models are located under the driver's seat.

BROCKWAY

*Six-wheelers.

CHEVROLET

Utility model available on 131-inch wheel base with chassis weight of 2,760 pounds and equipped with dual rear wheels.

DAY ELDER

*Six-wheeler.

Additional standard wheel bases are available on different models as follows:

85.....146, 168 240.....204
110.....168, 186 285.....204
130.....162, 187, 193 345.....204
160.....165, 180, 204 402.....204

DODGE

***Models F40, F41, F61 and F62 can be had with double drop frame.**

DIAMOND T

*Six-wheelers.

Additional standard wheel bases available as follows:

551.....158 750.....167, 192
504.....166½ 801.....180½, 195¼
506.....174 1200.....174½, 180
603.....157, 179 1600.....174½, 180
606.....177½ 1601.....184

F. W. D.

*Indicates six-wheel model.

The BTL and BT models are special line construction trucks in which complete provision for mounting AT and T earth boring machine, winch, body and other line construction accessories is included in the standard chassis.

Special power take-off transmission, which provides 3 power take-offs which may be operated in any transmission speed, optional on all models.

FEDERAL

*Six-wheelers.

†Solid tires standard, no spare rim or tire.

GRAMM

Series	Straight Rating	Wheel Base		Pay Load Range
AX 4	8,000	157	1	to 1½ tons
AX 6	8,000	157	1	to 1½ tons
BX 4	10,000	157	1½	to 2 tons
BX 6	10,000	157	1½	to 2 tons
CX 4	12,000	157-180	2	to 3 tons
CX 6	12,000	157-180	2	to 3 tons
B	12,000	157-174	1¾	to 2½ tons
C	14,000	145-196	2	to 3 tons
D	17,000	145-196	2½	to 4 tons
E	20,000	145-196	3	to 4½ tons
EY			3	to 4 tons
GY			4	to 5 tons
GW	28,000	157-240	5	to 7½ tons
HY			5	to 6½ tons

†Both the four and six cylinder are also offered in 157-inch wheel base at $1,145 and $1,345, respectively.

GENERAL MOTORS TRUCK

*Capacity indicated is the Straight Rating (combined weight of chassis, body, equipment and pay load) for which each chassis is designed and guaranteed to satisfactorily operate under average conditions. The size of the tires used does not affect this Straight Rating, but to secure maximum tire mileage it is suggested that the total gross weight be limited to a "recommended gross weight" for each tire equipment based on tire capacity. Prices cover base chassis and vary with wheel base and tire combinations. The number of wheel base lengths, tire types, range of "recommended gross weights" and resulting pay load range (assuming nominal body allowance) for each model follows:

Note: Models T-15 to T-61, inclusive, as well as models TX and WX, are available for export only as coach chassis.

Model	Wheel Bases	Tire Types	Range of Rec. Gross Weights*	Pay Load Range
T-11	1	1	3800	½
T-15	3	10	4500- 6500	½-1½
T-19	3	22	6500- 8500	1½-2
T-25	3	17	6800- 9000	1½-2
T-26	4	..	8500-11000	2-3
T-30	3	15	10000-12500	2-3
T-31	4	..	11000-14000	2½-4
TX	186½	1	..	14000
WX	185	1	..	14500
T-42	4	12	12000-15000	2½-4
T-44	4	12	12000-16000	3-4½
T-45	4	..	13500-16000	3-4½
WX	215	1	..	17000
T-51	4	..	16500-19000	4-5½
T-55	4	..	16500-19000	4-5½
T-60	4	18	18500-22000	5-6½
T-61	4	..	19500-22000	5-6½
T-82	4	12	19000-24000	5-7
T-83	4	..	20000-24000	5-7
T-85	3	..	22000-26000	5-7
T-90	3	7	22000-28000	5-7½
T-95	3	..	28000-34000	7-9
T-96	3	..	28000-34000	7-9

†Models T-90, T-95 and T-96 are six-wheelers, the latter having one driven and one trailing axle. Optional rear axle gear ratios available for all models. Double reduction axles available for Models T-60, T-61, T-82 and T-83.

INDIANA

*Six-wheelers.

MACK

Other wheel bases furnished on all truck models.

On 6-wheel jobs 4 rear wheels driven by chains, foot brake on 4 rear wheels.

††Made also in tractor models.

PAIGE

*Price includes panel or screen body. †Chassis weight given does not include gas, water, etc.

PIERCE-ARROW

*Optional final drive on Models PW, FX, PY and PZ.

REO

Models DF 129, DF, FA, FE and FF are available with duel wheels at additional cost.

*Models DF129 and DF 135 can be had with either 3 or 4 speed transmission.

SELDEN

Additional standard wheel bases are available on different models as follows:

Model 37C..... 162 and 181
39C..... 177 and 190½
47CB, 47CD.. 151, 164 and 184
67C.....151, 164, 184 and 198

STEWART

Models 30 and 30X can also be supplied in 110, 120, 140 and 160-inch wheel base.

Models 40 and 40X can also be supplied in 110, 140 and 160-inch wheel base.

*Models 34X can be supplied in 135, 145, 160 and 176-inch wheel base.

Model 28X can be supplied in 130, 145, 160 and 176-inch wheel base.

Model 29XS can be supplied in 135, 160 and 176-inch wheel base.

*Models 18X, 32X and 36X can be supplied in 148, 190 and 220-inch wheel base.

*Models 19X, 31X and 27X can be supplied in 148, 172, 190, 220 and 235-inch wheel base.

As optional equipment Models 18X, 29X, 36X, 31X and 27X can be supplied with Timken dual reduction rear axle.

Models 38-8 and 38-6 can be supplied in 150, 160, 170, 196, 226 and 241-inch wheel base and worm axle.

STUDEBAKER

Maximum gross load, chassis, body and pay load for Model 88 to 12,500 pounds and for Model 99 is 14,000 pounds.

‡Hand brake same as foot brake, standard. Hand brake on drive shaft, special equipment.

WHITE

*Six-wheelers.

**Price on Model 60K includes body.

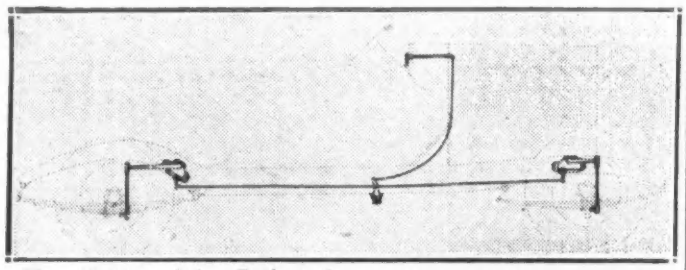
UNITED BOSCH NAMES NEW SERVICE STATIONS

Springfield, Mass., Aug. 20.—The United American Bosch Corporation announces the appointment of the following:

Service Stations: Cousins Tractor Company, 112 East 7th St., Hanford, Cal.; Los Gatos Auto Electric Company, 60 North Santa Cruz Ave., Los Gatos, Cal.;

Production--Engineering--Factory

Monroe Ride Selector Varies Shock Absorber Tension



The Monroe Auto Equipment Company, Monroe, Mich., announces a new Ride Selector, combined with its Hydraulic Shock Eliminator, and operated from the driver's seat of the automobile.

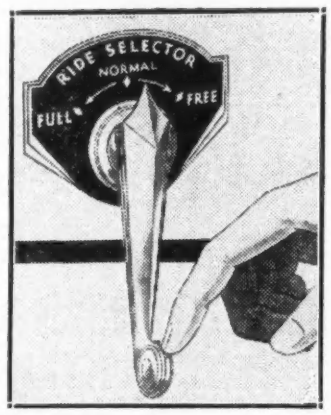
The control lever is an attractive piece of ornamental hardware, conveniently mounted on the instrument panel. This device makes it possible to set the hydraulic shock absorbers instantly, so that they will deliver exceedingly easy riding regardless of the surface over which the car passes and regardless of the speed.

There are three principal settings on the Ride Selector, yet it is possible to obtain instantly a hundred different degrees of resistance and a hundred per cent. improvement in riding comfort, it is claimed.

Another advantage claimed is that the new Ride Selector prevents the body swaying and weaving, thereby giving the occupants of the car a new sense of safety.

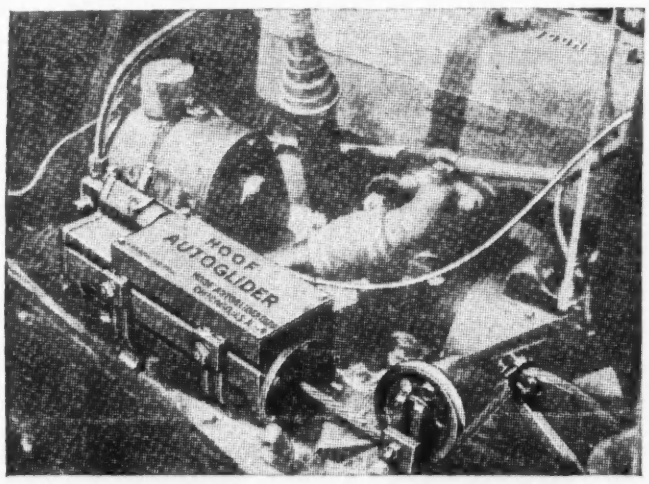
Certain parts of this device have been patented by Monroe Auto Equipment Company, while patents on other parts are pending.

UNIFORM CONTROL of all four shock absorbers is assured by the unit control system above



THE RIDE-SELECTOR control on the dash is neat and ornamental

Hoof Autoglider Offers Free-Wheeling Unit



INSTALLATION of the Hoof Autoglider is shown above in Model A Ford

The Hoof Autoglider Corporation, 162 North Franklin St., Chicago, Ill., has just introduced a new clutch-control free-wheeling device which can be applied to all cars, past or present, with the exception of the Model T Ford.

The new device operates by the engine compression and is automatically controlled by depressing or releasing the foot accelerator. In addition to the features of free-wheeling, it is claimed that ,in event of the engine stalling during free-wheeling, the Autoglider will automatically restart it.

The Hoof Autoglider uses the changes in pressure existing in the intake manifold under operating conditions to govern the device.

When the foot is removed from the throttle this action is transmitted, due to high vacuum, to a self-adjusting piston which declutches the car.

When the foot is applied to the throttle a lower vacuum is registered and the clutch returns by a special patented feature, and makes engagement at any speed. This constitutes one of the patented principles of the Hoof Autoglider.

The divice is thoroughly sealed against foreign matter getting in to interrupt performance.

Generous use of stainless steel, bronze and cast iron gives ample strength for the hardest usage. List price, $33.

EMPIRE PETROLEUM BUYS FOR EXPANSION

Elizabeth, N. J., Aug. 20.—Purchase of a tract of land 55 by 294 feet, a portion of the property of the former Moore plant of the Bethlehem Steel Company in 1st Street and Front Street is announced by T. J. Kiernan, president and general manager of the Empire Petroleum and Transportation Company of 93 Front St.

The tract comprises a strip at the extreme eastern end of the property extending from Front Street to the waterfront and adjoining the present property of the petroleum firm. It was purchased, Mr. Kiernan said, to provide additional waterfront facilities and also additional storage space.

REDUCING GASOLINE EVAPORATION LOSSES

Large quantities of gasoline are lost each year by evaporation from bulk-storage station tanks, according to the results of a study of the subject just completed by the United States Bureau of Mines, Department of Commerce. The tests made by the Bureau of Mines show that light-colored points, tank housing and increased operating pressures each materially reduce the evaporation losses of gasoline in bulk-station storage tanks.

The results indicate that probably combinations of pressure with light-colored paints or tank housing would be most effective and economical in reducing these losses. It is believed that bulk-station operators will find it economical to use relief valves that will close quickly and tightly as soon as the pressure within the tank is reduced to the operating pressure of the valves. The rate of evaporation from bulk-station tanks is influenced by two principal factors: First, the vapor pressure of the gasoline in the tank; and, second, the amount of "breathing" of the tank. The vapor pressures of the gasoline govern the amount of the gasoline vapor in the air-vapor mixture above the gasoline in a tank at a given temperature. The 'breathing" of the tank is caused by the inflow of air from the atmosphere during certain periods of the day and the expulsion of the air-vapor mixtures at other times, caused by atmospheric variations.

Two of the most common methods for reducing evaporation losses from bulk-storage tanks are: The use of vapor-tight tanks equipped with relief valves, and reducing the temperature of tanks and their contents by painting them a light color, by insulation, and in some instances by using water sprays.

In order to determine and compare the effects of various colors, insulation and pressure in reducing the evaporation losses of gasoline held in storage in bulk-storage tanks, the Bureau of Mines made observations on five horizontal tanks of 12,000-gallon capacity each, which were erected in Kansas City, Mo.

Each of the five test tanks was approximately 20 feet long by 10 feet in diameter, fabricated from ¼-inch steel tank plates and of welded construction. One tank was painted with two coats of white paint, and, in addition, was protected with an insulated housing consisting of a corrugated composition sheet siding or roofing attached to a welded steel frame. Another tank was covered with aluminum foil, which was applied like wall paper. The third tank was painted red with an iron oxide steel priming paint. Although it is not customary to use red paint for the finish coat on bulk storage tanks, this color was included in the test for comparison. Two tanks were painted with aluminum paint, using the commercial grade of aluminum powder.

All tanks were equipped with vacuum and pressure relief valves, vapor-tight gauge bath and a manhole. One of the aluminum coated tanks was operated under a pressure of five pounds per square inch and four of the tanks were operated at two-ounce pressure. All tanks were equipped with recording thermometer and pressure gauges for continuously recording changes in temperature and pressure within the tanks.

The test period included those months in which the consumption of gasoline is the greatest and which comprise the hottest period of the year—the most conducive to the loss of gasoline by evaporation.

The tests show also the advantages of designing tanks for new installations to operate under at least five pounds pressure and in the older installations of testing the tanks, and, where possible, of equipping them with relief valves which operate under at least three pounds pressure.

Aluminum Melting in the Electric Furnace

By WIRT S. SCOTT

Special Representative Westinghouse Electric and Manufacturing Company, Mansfield, O.

The following treatise on "Aluminum Melting in the Electric Furnace" will appear serially in the Automotive Daily News:

One of the principal advantages in the melting of aluminum in electrically heated furnaces is the elimination of minute blow holes, and the ability to secure oil-tight castings.

A very large order of aluminum castings was required in connection with switch gear apparatus. About two dozen of these castings weighed 600 pounds each, and a great many were required of small sizes. These castings had to be oil tight. The construction of these castings out of aluminum would have been almost prohibitive, using any kind of furnace other than the electric furnace for melting the aluminum, due, first, to the expense of trying to make them oil tight, and second, due to the possibility of leaks developing after being placed in service.

A leak developing in any of the castings, particularly the large ones, might occur in such a place that the entire casting would have to be dismounted from the structural work in order to make repairs, a very difficult, expensive and hazardous undertaking.

Bringing the metal up to the correct temperature and holding it there until ready to be poured is the secret of homogeneous aluminum castings. The cost of electric power is very small in comparison to the possible expenditure due to the failure of one casting. The saving in labor expense in stopping up the leaks in castings poured from fuel furnace will pay for the electric power several times.

Process specification in effect stated that heavy castings should be poured at 680 deg. C. (1,256 deg. F.), medium castings at 750 deg. C. (1,382 deg. F.) and light castings at 810 C. (1,490 deg. F.). Furthermore, that every effort should be made to keep the temperature of the metal not over 25 deg. C. above the pouring temperature of the castings.

Quoting from one company's publication on aluminum casting alloys, the following is of interest:

"The higher the temperature from which a given casting is poured, the slower the freezing rate, and consequently the larger the crystal size of the metal in the casting, the larger crystal or grain size resulting in a decrease in physical properties. It is noteworthy that heating the molten alloy above the proper pouring temperature is injurious, even though the metal be cooled to the correct temperature for pouring. Probably the most frequent cause of trouble in the production of aluminum castings is the lack of control of the melting and pouring temperatures."

The metallurgical department reports that prior to the use of electric furnaces, great difficulty had been experienced in preventing the over-heating of the metal. On one test run made, at which a pouring temperature of 1,240 degrees F. was desired, the metal was removed from the furnace just as soon as possible after that temperature was reached, but not before the temperature had increased to 1,370 degrees F., due to the great amount of heat at high temperature being stored in the crucible. This condition is the result of the crucible being in direct contact with the flame at approximately 3,000 degrees F., so that heating of the metal continues, even after the gas is cut off.

Castings should be poured within forty-five degrees F. of the specified temperature, as outside limits, or suffer a deterioration in physical qualities. The tensile strength and elongation decreases very rapidly as the temperatures increase or decrease from these limits.

The foundry is highly pleased with the performance of the aluminum melting furnaces, from every angle, including maintenance, power cost, quality of product, ease of operations and improved working conditions. The superintendent has made an official request for additional electric melting furnaces to supersede all the fuel fired furnaces now used in the melting of aluminum. The electric furnaces have proved beyond question their economic value in the melting of aluminum for the production of castings.

(TO BE CONCLUDED)

NEW BATTERY CONCERN FORMED IN FLORIDA

Fort Pierce, Fla., Aug. 20.—A new concern, the Atlantic Battery Manufacturing Company, Inc., has just been announced by H. F. Stanton, manager of the Stanton Company, automobile parts wholesale and retail firm of Fort Pierce and Orlando.

The new firm, it was stated, will manufacture batteries of all types and sizes, which will be marketed under three brands. Actual manufacture already has been started. With the exception of the rubber casing, the batteries are made complete here.

IN LARGER QUARTERS

Jacksonville, Fla., Aug. 20.—Barron Cash Tire Company, carrying a full line of Fisk tires and Willard batteries, has moved from 607 Forsyth St. to large and more spacious quarters at the corner of Jefferson and Adams Streets.

Sales at Low Cost

1931 Review and Reference Number August 27

The opportunity is presented in this issue to cover the automotive industry very thoroughly at low cost.

The distribution, including regular circulation, over 75,000. The regular space rates apply, even though the added distributions will cover:

Practically every dealer and distributor of vehicles in the United States.

10,000 independent repair shops.

4,000 engineers, production men and other factory officials.

2,000 jobbers of accessories, parts, shop equipment.

10,000 truck fleet owners, truck dealers and bus operators

Automotive Daily News
350 Hudson St. New York

Forms Close August 25—5 P. M.